

FIG. 1

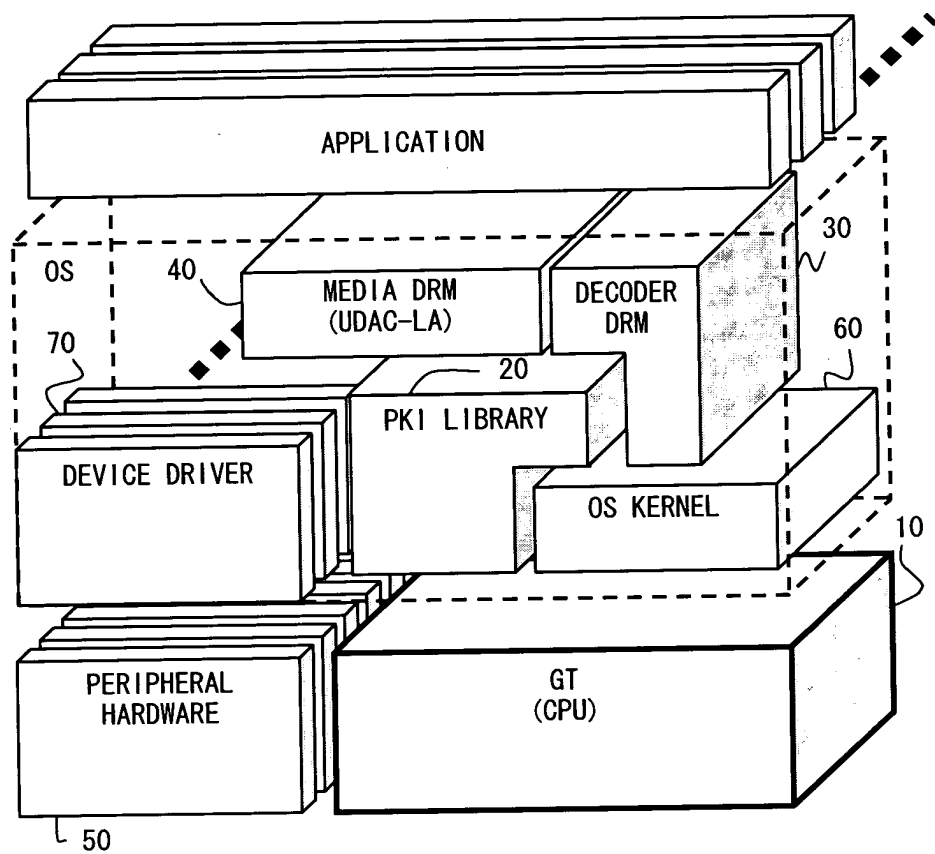


FIG. 2

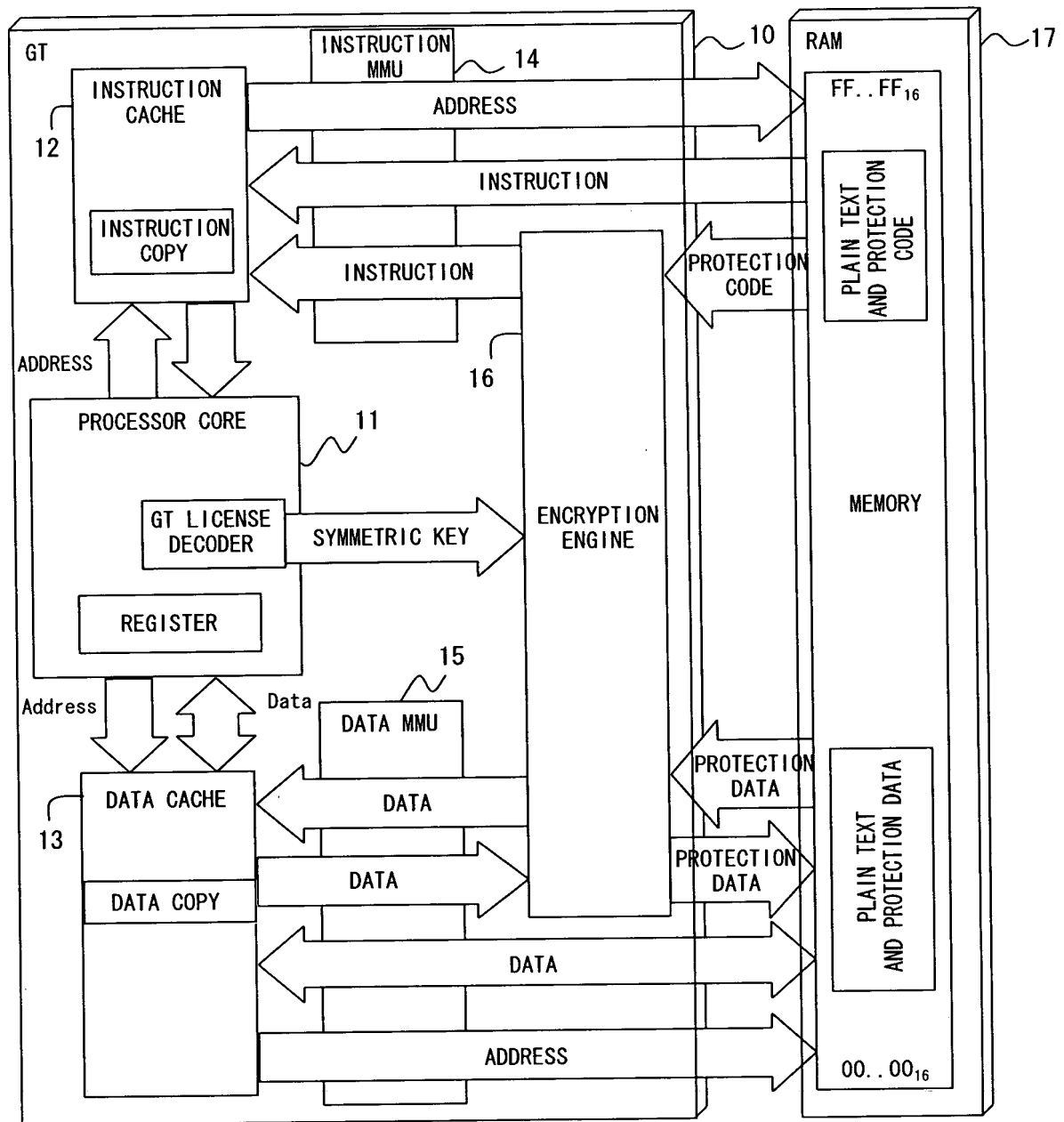


FIG. 3

Notation	Field Size	Name	Description
p	1 bit	Present flag	IF ON (1), THIS INDICATES THAT TRB IS VALID.
uo	1 bit	Unable to Output	IF ON (1), THIS INDICATES THAT CONTENT IS NOT OUTPUT.
cl	1 bit	Cache Lock	IF ON (1), THIS INDICATES THAT DATA ON TAMPER RESISTANT PAGE SPECIFIED WITH kid IS NOT OUTPUT TO OUTSIDE OF CACHE.
kid	20 bits OR SO	Key ID	INFORMATION FOR LINK FROM TLB.
key	128 bits OR MORE	Cryptographic Key	VALUE OF ENCRYPTION/DECRYPTION KEY OF CODE OR DATA ON PAGE LINKED TO THIS LINE. KEY OF SYMMETRIC (COMMON) KEY CRYPTOSYSTEM.
ackey	SAME AS key	Authorized code key	DECRYPTION KEY (key OF ANOTHER OR OWN LINE) OF EXECUTABLE CODE OF PROTECTION PROCESS PERMITTED TO ACCESS PAGES OF ALL TLB LINES INCLUDING kid.
eadr	64 bits OR SO	Exception address	START ADDRESS OF EXCEPTION PROCESS CODE WHICH OCCURS IMMEDIATELY BEFORE RESTORATION IS MADE FROM PAGE HAVING DIFFERENT key TO PAGE LINKED TO THIS TRB LINE.

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Notation		Field Size	Name	Description
p		1 bit	Present flag	INDICATES THAT TLB IS VALID
id		20 bit OR S0	Region Identifier	IDENTIFIER VALUE OF PAGE REGION INDICATED BY CORRESPONDING LINE WITHIN TLB
ppn		32 bits OR S0	Physical page number	PHYSICAL PAGE NUMBER OF CONVENTIONAL TLB.
vpn		56 bits OR S0	Virtual page number	VIRTUAL PAGE NUMBER OF CONVERSIONAL TLB.
rights	pl	2 bit	Privilege level	PRIVILEGE LEVEL ACCESSIBLE TO PAGE. FOR DETAILS, SEE FIGS. 6 AND 7.
	ar	3 bit	Access Rights	PRIVILEGE LEVEL ACCESSIBLE TO PAGE. FOR DETAILS, SEE FIGS. 6 AND 7.
	tr	1 bit	Tamper Resistance	IF ON (1), THIS INDICATES THAT PAGE EXISTS IN TAMPER RESISTANT SEGMENT SPACE, AND CORRESPONDING LINE EXISTS IN TRB.
	df	1 bit	Debug mode Flag	VALID ONLY IF tr IS ON (1). IF tr AND df ARE ON, DEBUG MORE SPECIFIED ACCORDING TO ar RUNS.
kid		20 bits OR S0	Key ID	IDENTIFICATION INFORMATION OF TRB LINE (INSERTION) FOR LINKING TO KEY INFORMATION WITHIN TRB.
ebim		3 bits OR S0	Encrypted Block Identification	COPIED VALUE OF ACgt.ebim OF GT LICENSE. THIS VALUE BECOMES 0 IF tr IS OFF.
sign		128 bits OR S0	Digital signature	DIGITAL SIGNATURE VALUE OBTAINED BY CONCATENATING FIELDS FROM vpn TO ebim. GENERATED BY GT.

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PRS. S EXECUTION MODE	PTE. TR (TLB. tr)	PTE. PP (TLB. ar)	IF (INSTRUCTION FETCH)	Load (LOAD INSTRUCTION)	Store (STORE INSTRUCTION)
1 SUPERVISOR MODE	0 NORMAL	000	OK	OK	OK
		001	OK	OK	NG
		010	OK	NG	NG
		011	NG	NG	NG
	1 TAMPER RESISTANT	000	SPECIFIED MODE	SPECIFIED MODE	SPECIFIED MODE
		001	SPECIFIED MODE	SPECIFIED MODE	NG
		010	SPECIFIED MODE	NG	NG
		011	NG	NG	NG
0 USER MODE	0 NORMAL	100	OK	OK	OK
		101	OK	OK	NG
		110	OK	NG	NG
		111	NG	NG	NG
	1 TAMPER RESISTANT	100	SPECIFIED MODE	SPECIFIED MODE	SPECIFIED MODE
		101	SPECIFIED MODE	SPECIFIED MODE	NG
		110	SPECIFIED MODE	NG	NG
		111	NG	NG	NG

FIG. 6

TLB. rights		TLB. pl	Process Privilege Level				Description
tr&df	ar		3	2	1	0	
tr=0 or tr=1,	0	3	R	R	R	R	ONLY read
		2	-	R	R	R	
		1	-	-	R	R	
		0	-	-	-	R	
	1	3	RX	RX	RX	RX	read, execute
		2	-	RX	RX	RX	
		1	-	-	RX	RX	
		0	-	-	-	RX	
	2	3	RW	RW	RW	RW	read, write
		2	-	RW	RW	RW	
		1	-	-	RW	RW	
		0	-	-	-	RW	
	3	3	RWX	RWX	RWX	RWX	read, write, execute
		2	-	RWX	RWX	RWX	
		1	-	-	RWX	RWX	
		0	-	-	-	RWX	
tr=1, df=0	0	3	PR	PR	PR	PR	ONLY read FROM SPECIFIED PROCESS
		2	-	PR	PR	PR	
		1	-	-	PR	PR	
		0	-	-	-	PR	
	1	3	X	X	X	X	execute AND read FROM SPECIFIED PROCESS
		2	-	X	X	X	
		1	-	-	X	X	
		0	-	-	-	X	
	2	3	PRW	PRW	PRW	PRW	read AND write FROM SPECIFIED PROCESS
		2	-	PRW	PRW	PRW	
		1	-	-	PRW	PRW	
		0	-	-	-	PRW	
	3	3	PWX	PWX	PWX	PWX	read, write, AND execute FROM SPECIFIED PROCESS
		2	-	PWX	PWX	PWX	
		1	-	-	PWX	PWX	
		0	-	-	-	PWX	

FIG. 7

ENCRYPTION KEY TABLE

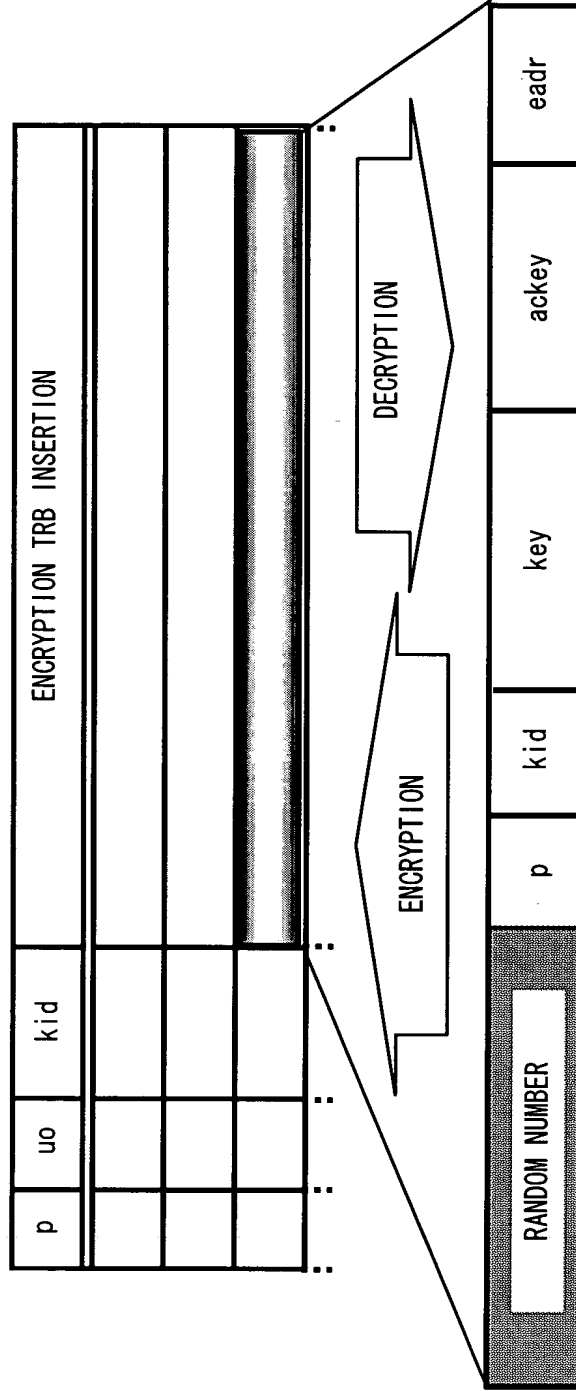
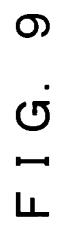


FIG. 8



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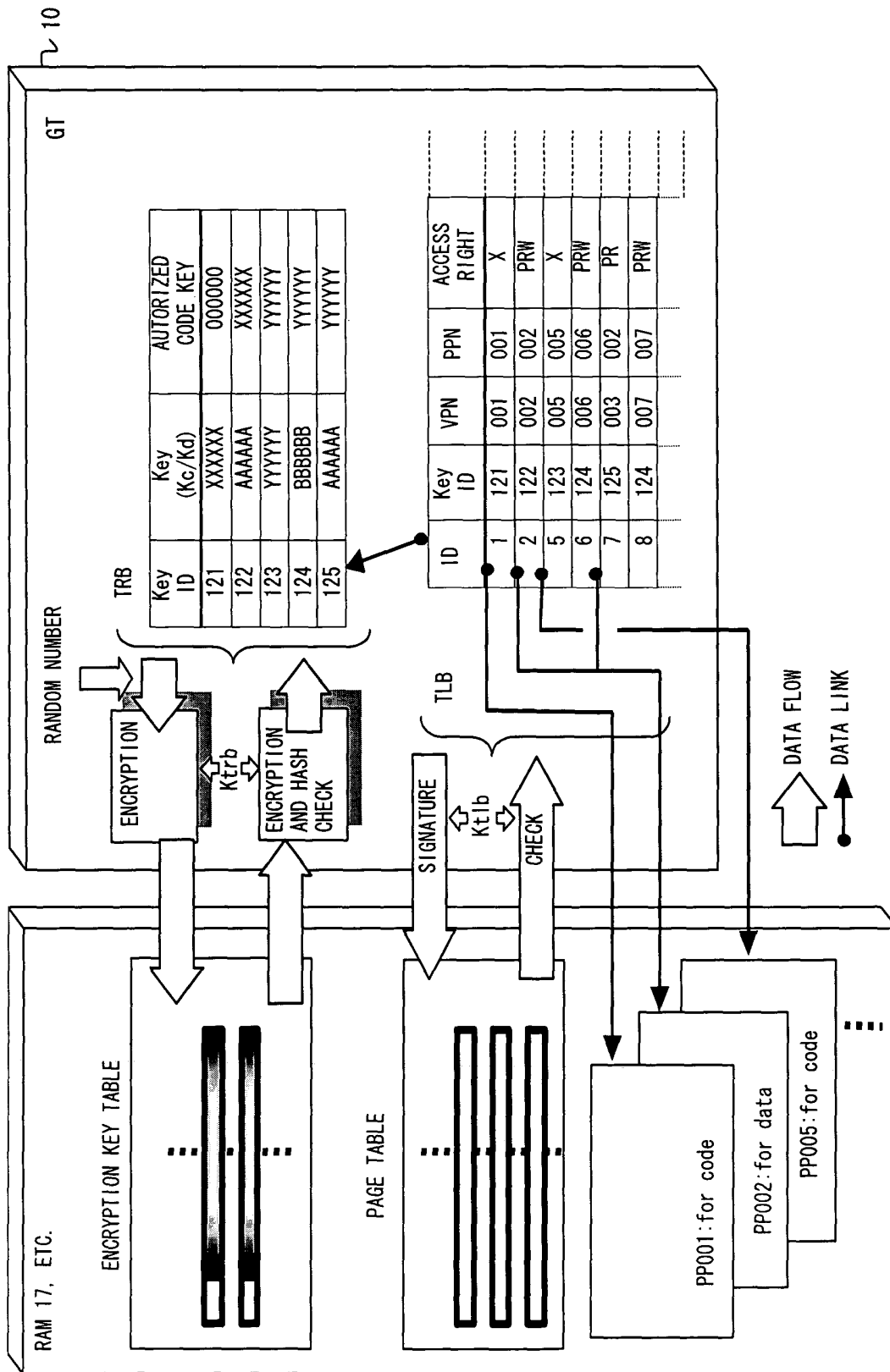


FIG. 10

Notation	Field Size	Name	Description
trss	1 bit	Tamper Resistant Segment Selector	IF ON, TAMPER RESISTANT SPACE IS SELECTED, IF OFF, NORMAL VIRTUAL SPACE IS SELECTED.

FIG. 11

Notation	Field Size	Name	Description
rid	8 bits OR S0	Register ID	ID SPECIFYING REGISTER.
seal	1 bit	Seal flag	IF ON (1), THIS INDICATES THAT REGISTER IS BEING SEALED. IF OFF (0), THIS INDICATES THAT REGISTER IS RELEASED.
ackey	SAME AS TRB. key	Authorized code key	Key TO CODE PAGE OF PROCESS PERMITTED TO ACCESS REGISTER.

FIG. 12

Notation	Field Size	Name	Description
r1ss	1 bit	Register 1 Seal Status	IF ON (1), THIS INDICATES THAT r1 IS BEING SEALED. IF OFF (0), THIS INDICATES THAT r1 IS RELEASED.
r2ss	1 bit	Register 2 Seal Status	IF ON (1), THIS INDICATES THAT r2 IS BEING SEALED. IF OFF (0), r2 IS RELEASED.

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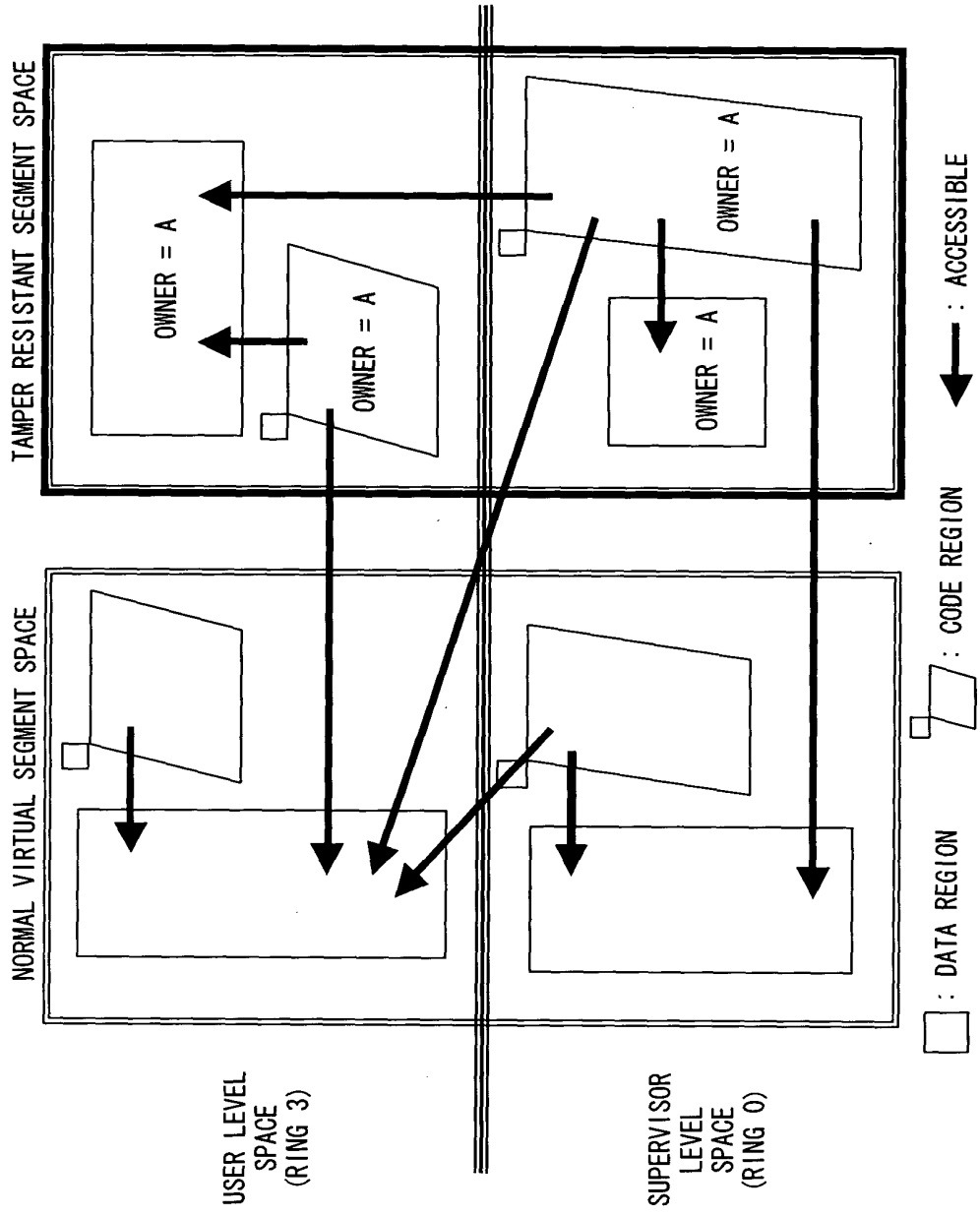


FIG. 14

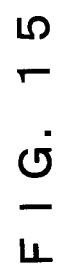


FIG. 15

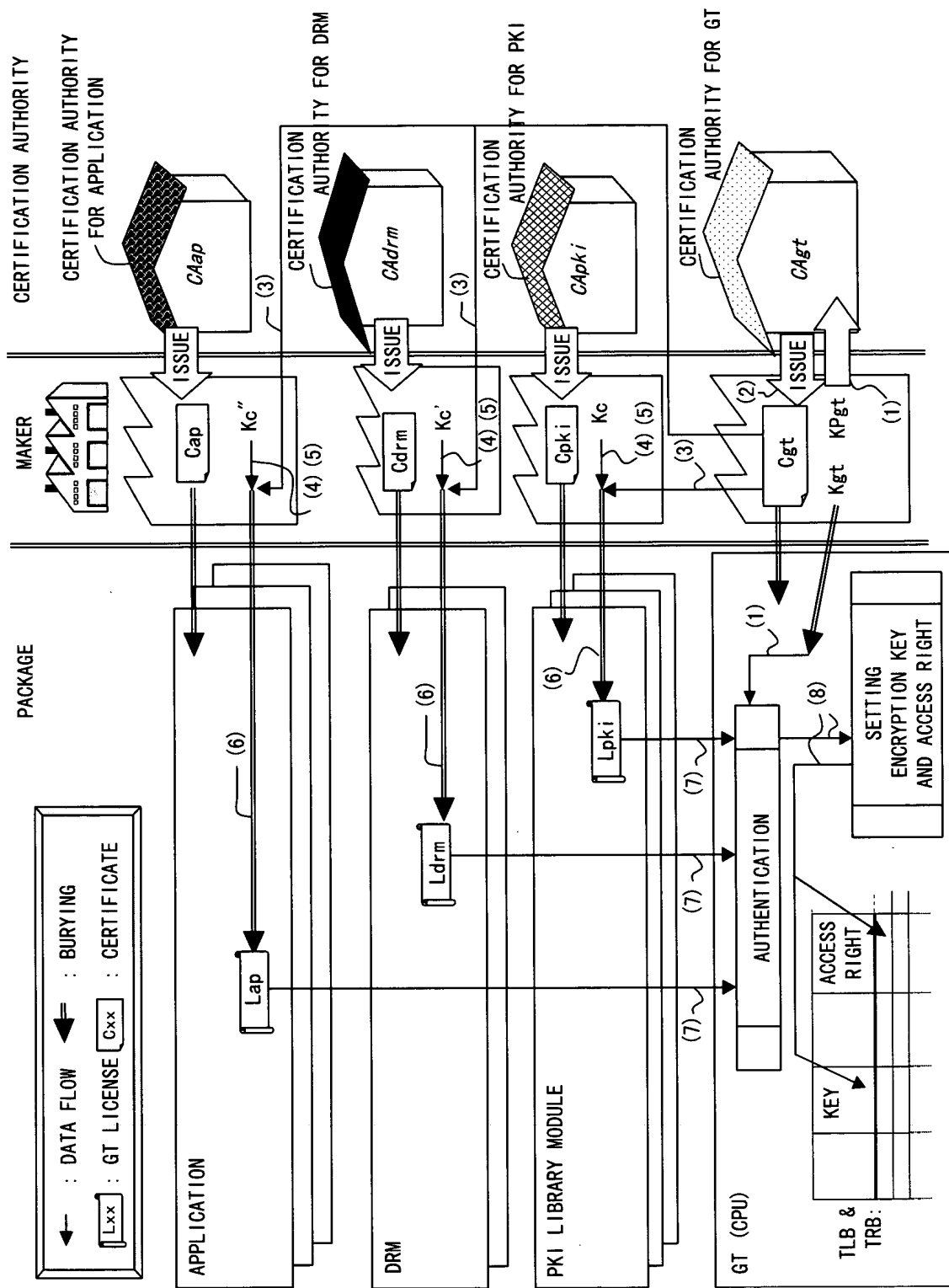


FIG. 16

SYMBOL	DECRYPTION	read RIGHT	write RIGHT	execute RIGHT
PR	READ CAN BE MADE ONLY FROM SPECIFICATION CODE	SPECIFICATION CODE*1	NONE	NONE
X (PRX)	READ AND EXECUTION CAN BE MADE FROM SPECIFICATION CODE	SPECIFICATION CODE*1	NONE	SPECIFICATION CODE*1
PRW	READ AND WRITE CAN BE MADE FROM SPECIFICATION CODE	SPECIFICATION CODE*1	SPECIFICATION CODE*1	NONE
PWX (PRWX)	READ AND WRITE CAN BE MADE FROM SPECIFICATION CODE	SPECIFICATION CODE*1	SPECIFICATION CODE*1	SPECIFICATION CODE*1

F I G. 1 7

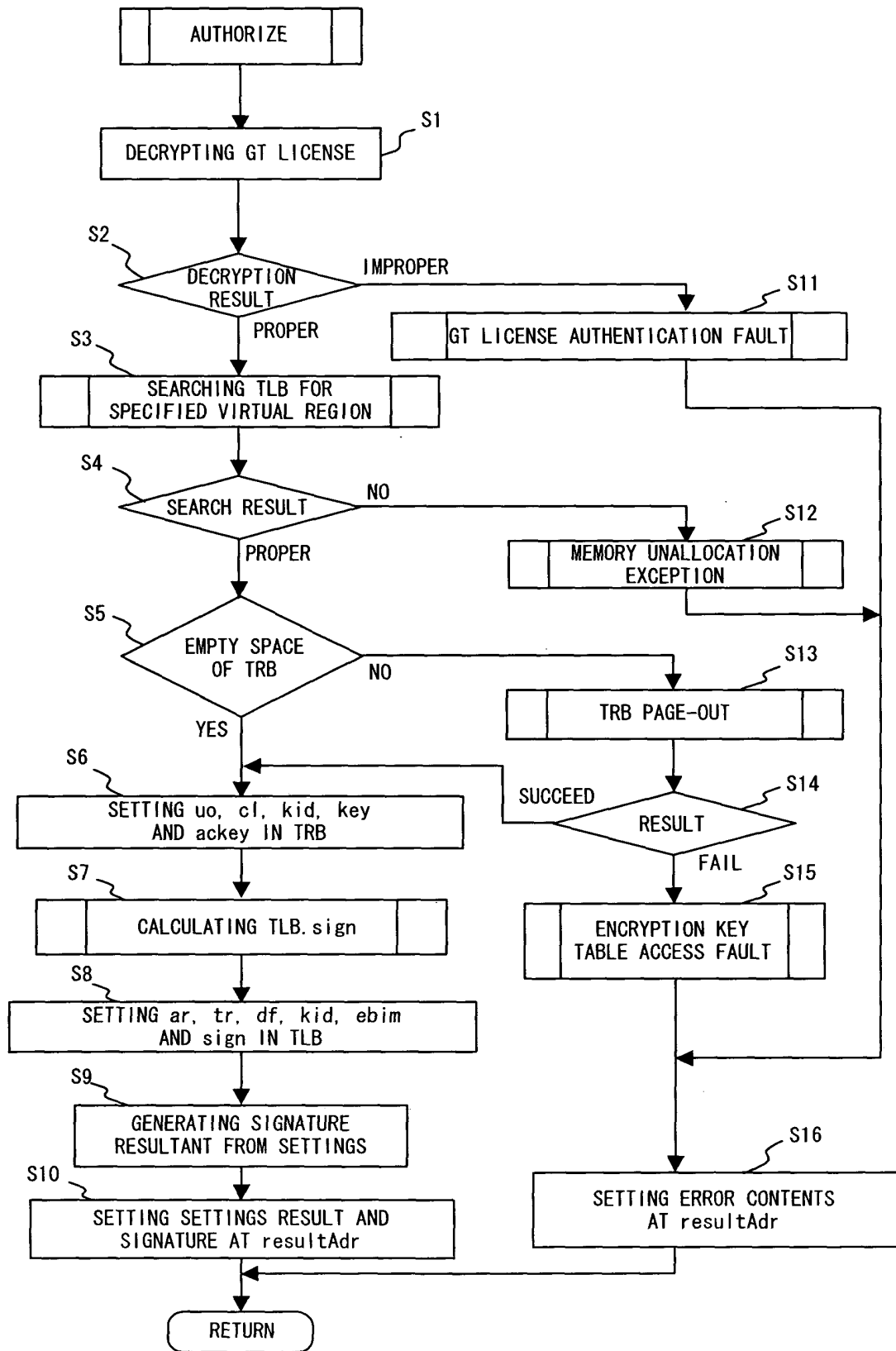


FIG. 18

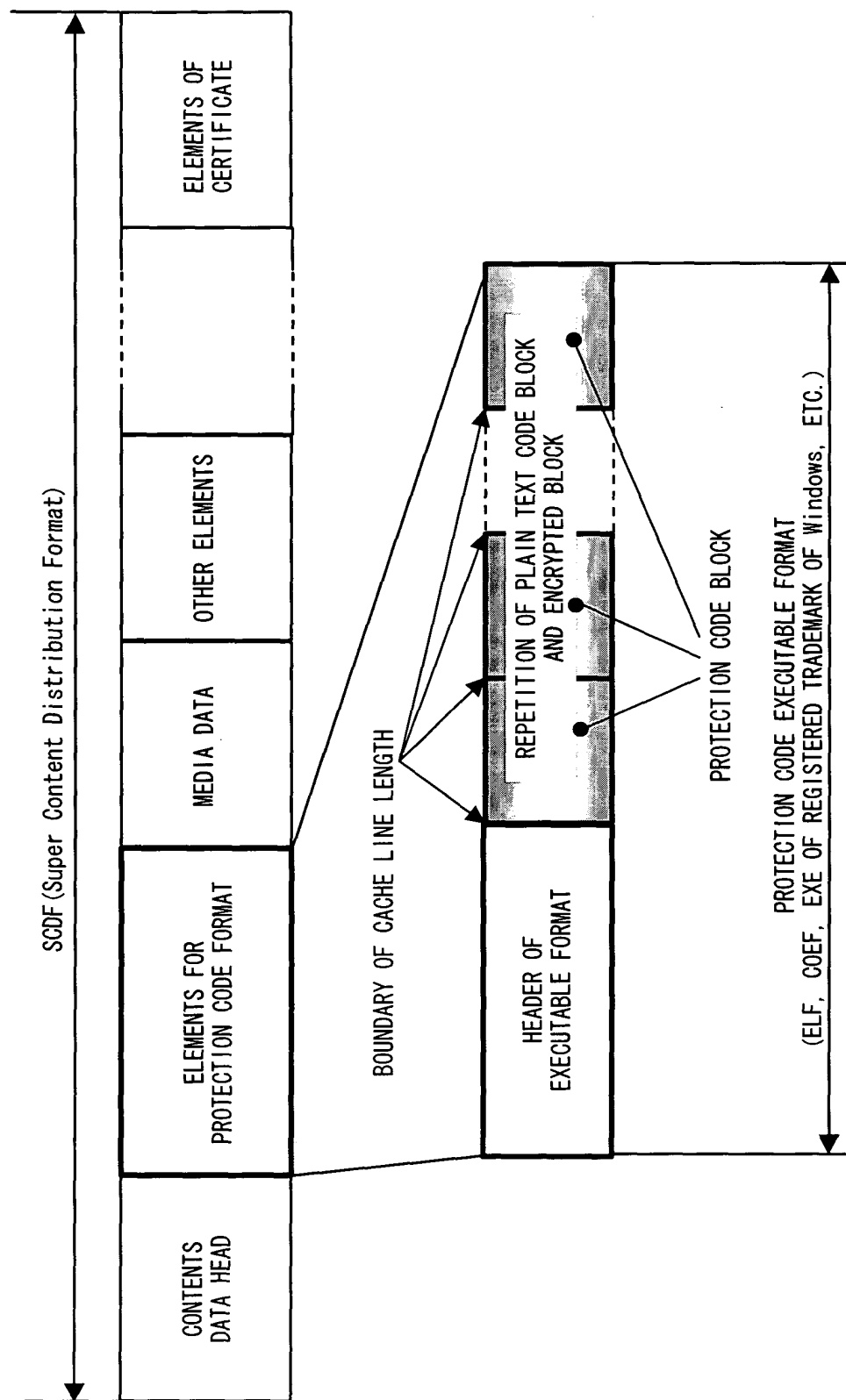


FIG. 19

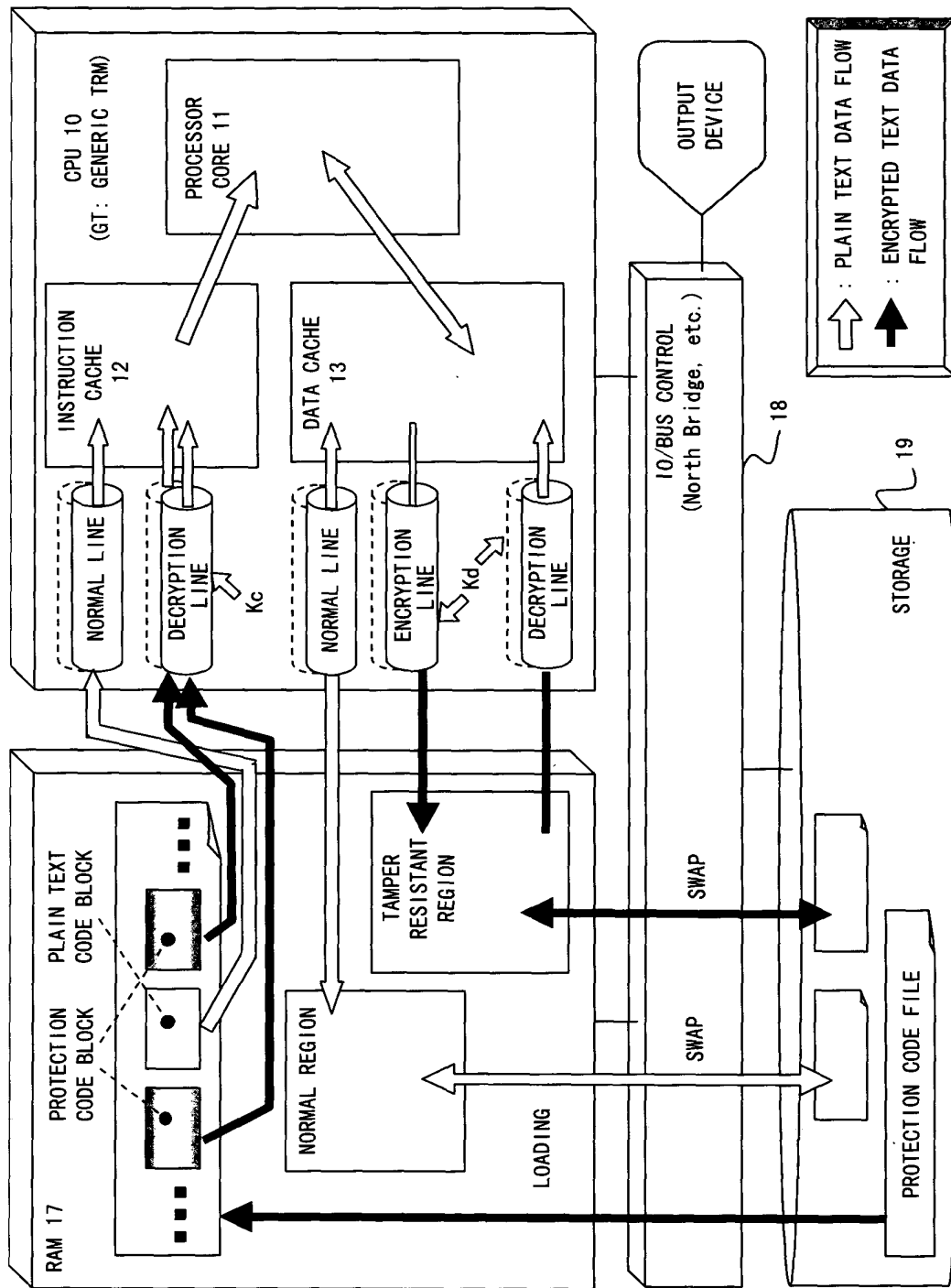


FIG. 20

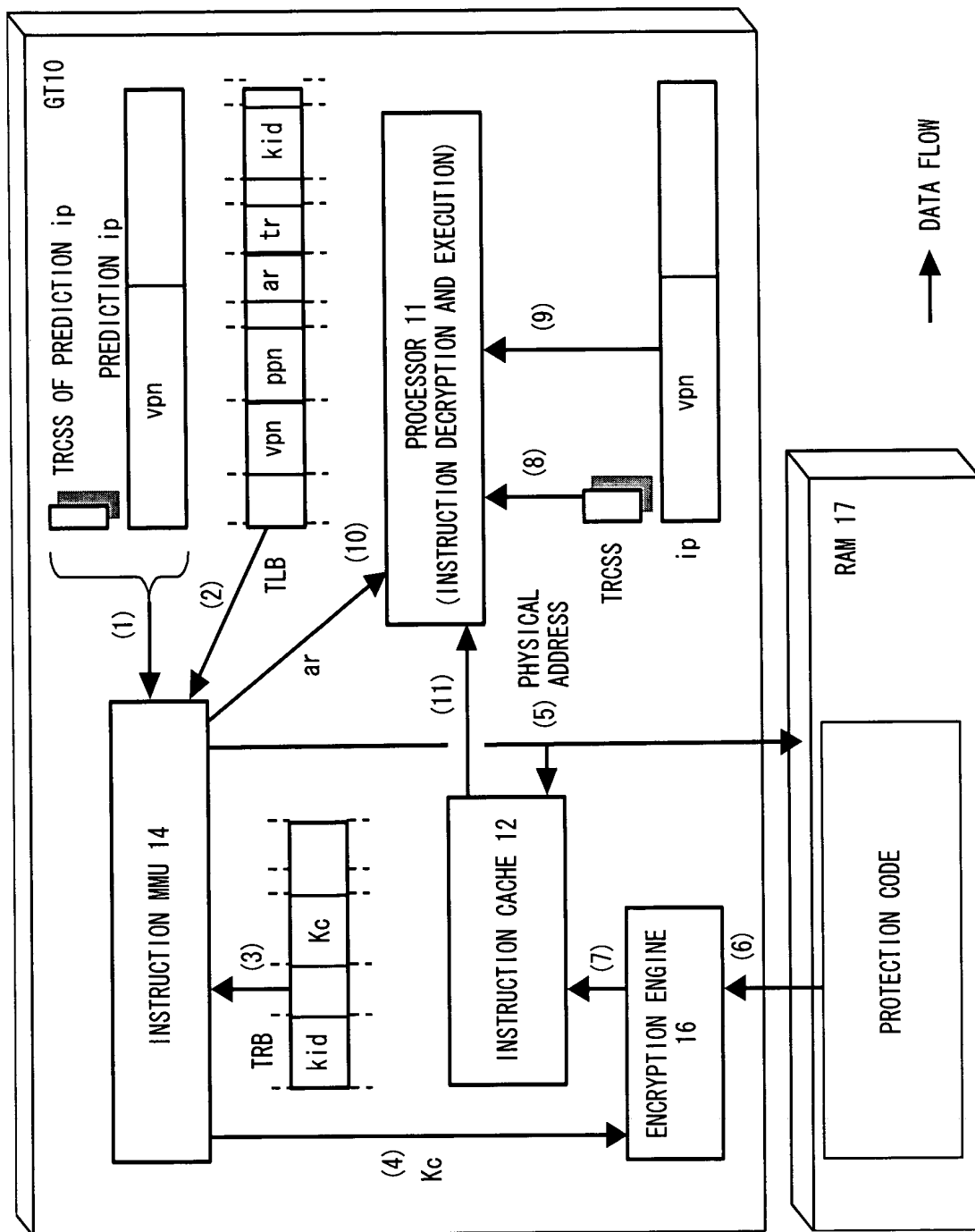


FIG. 21

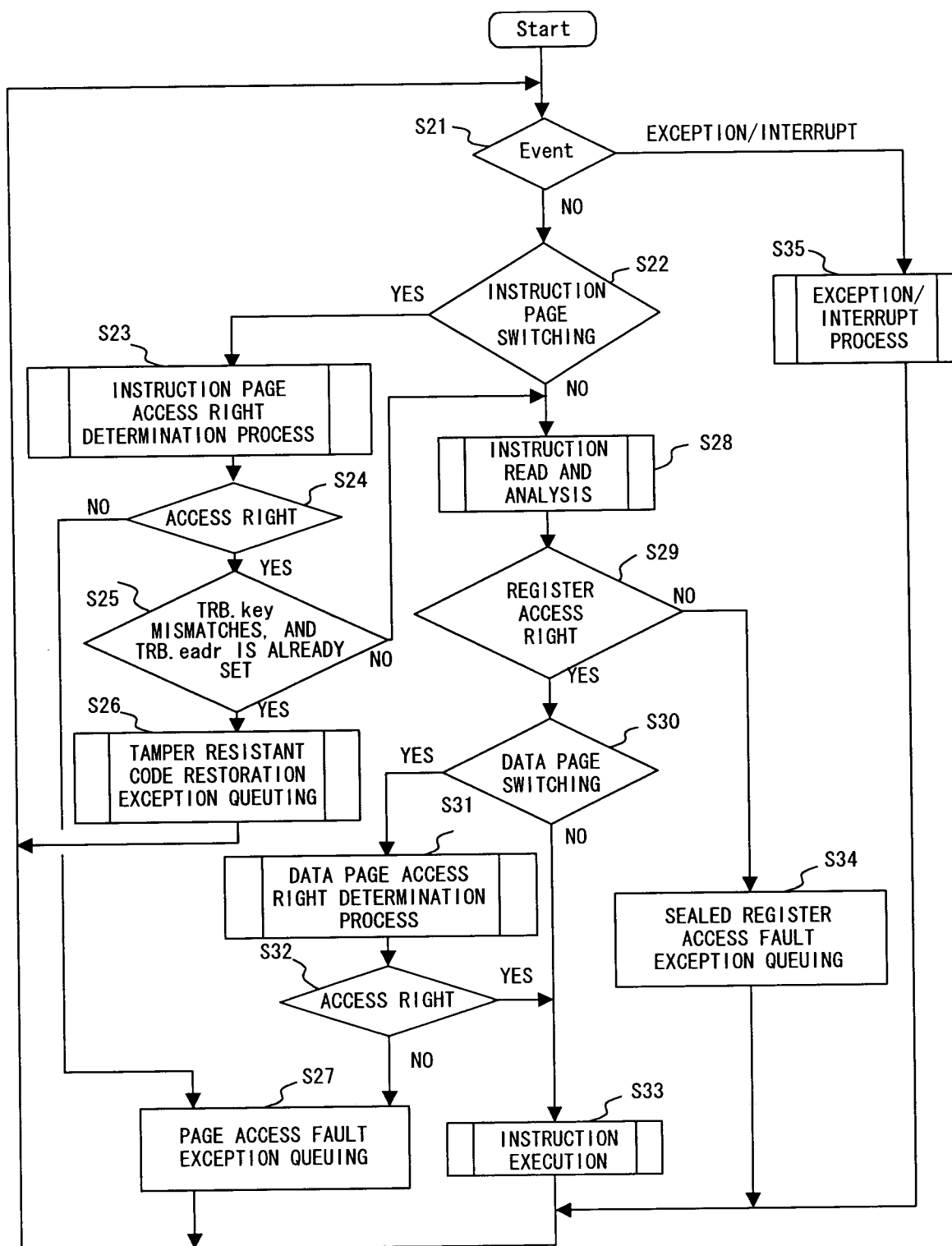


FIG. 22

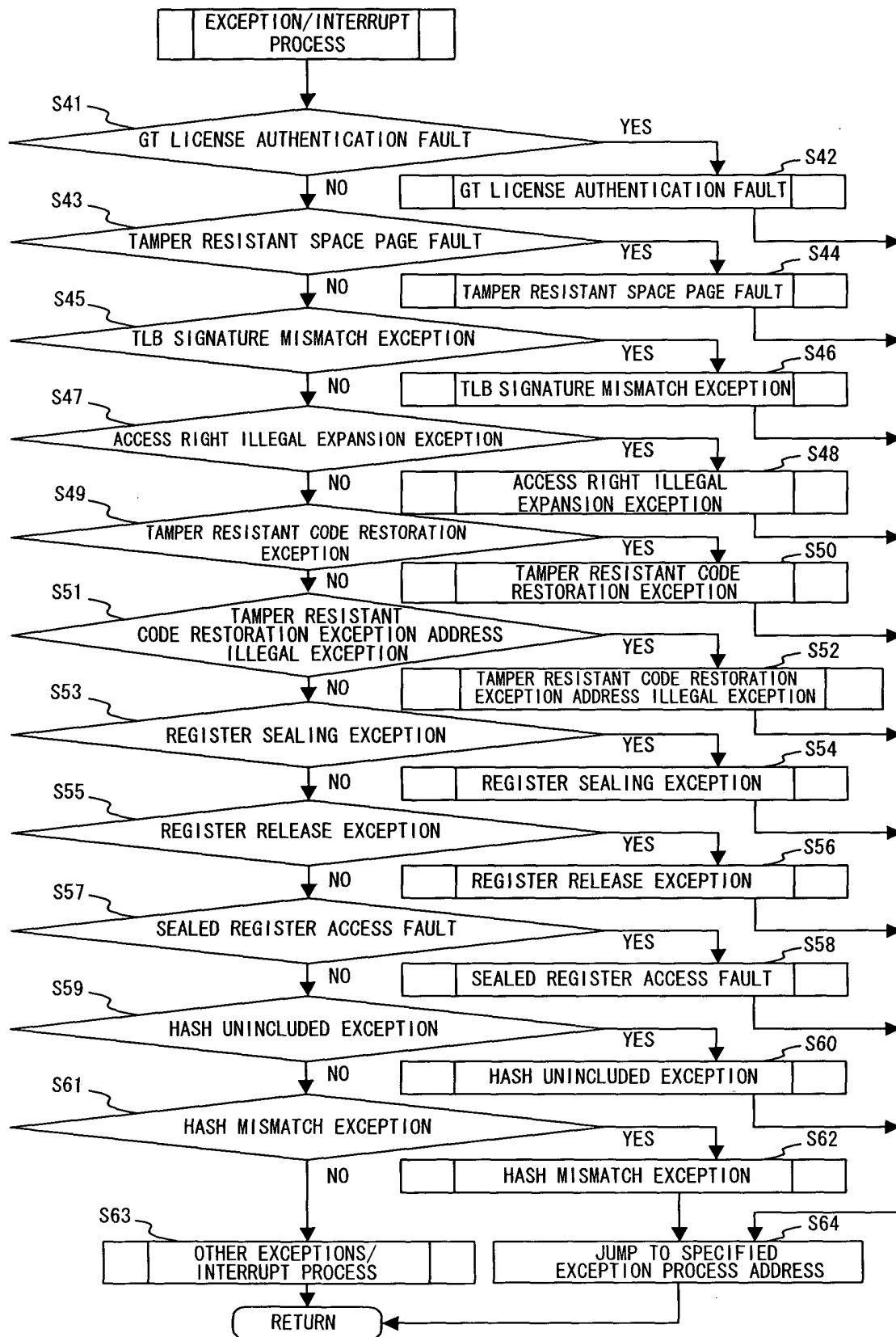


FIG. 23

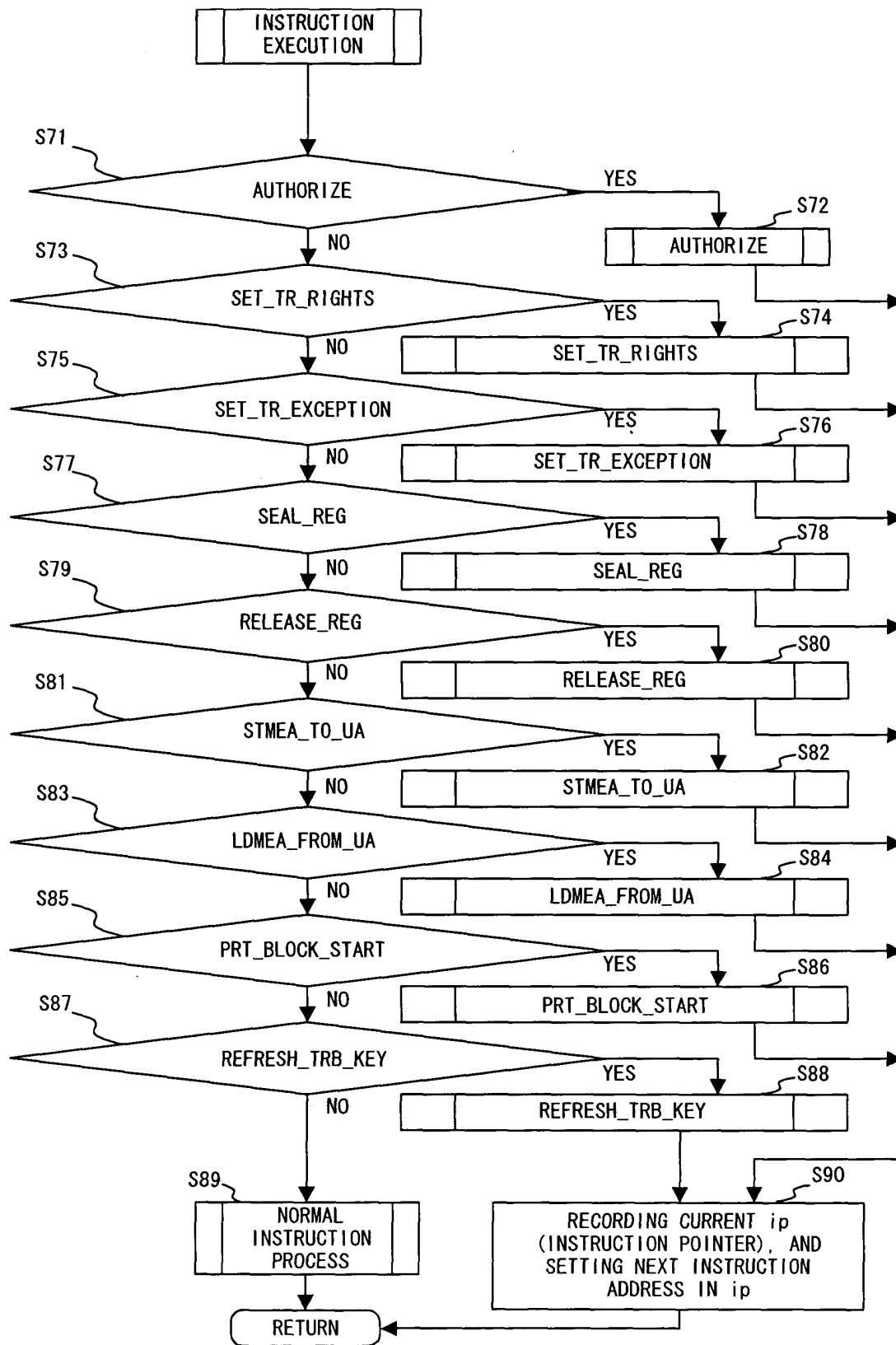


FIG. 24

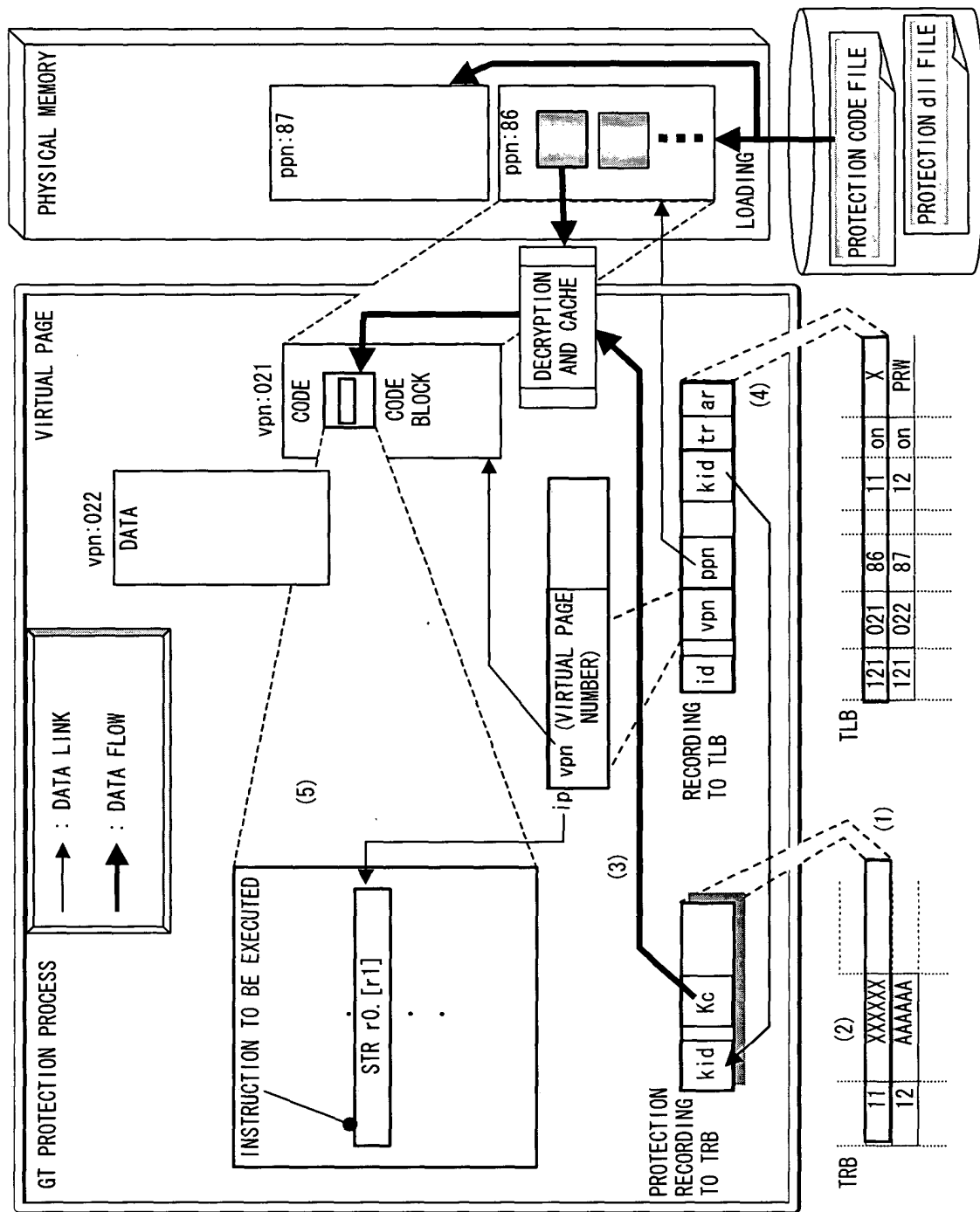


FIG. 25

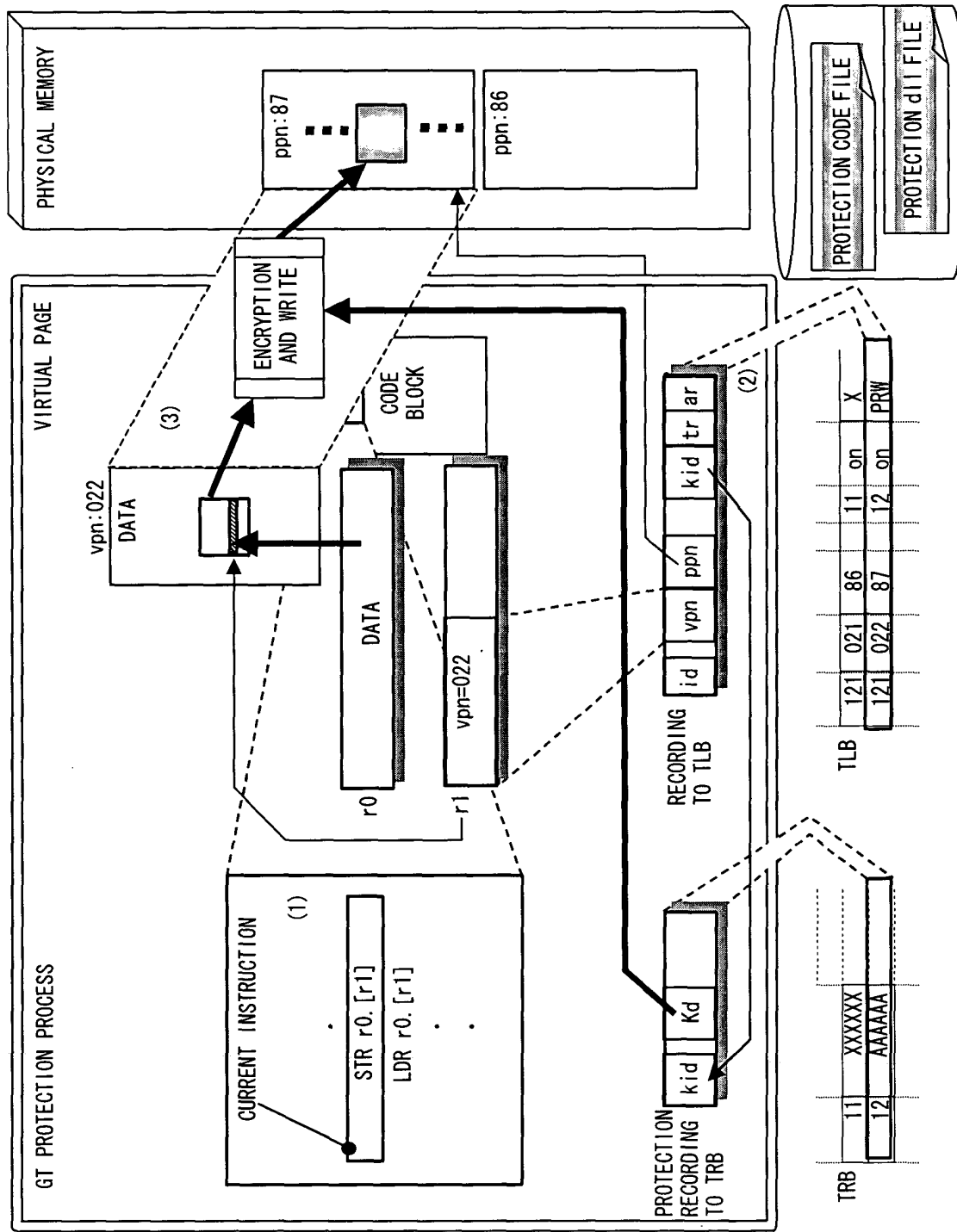


FIG. 26

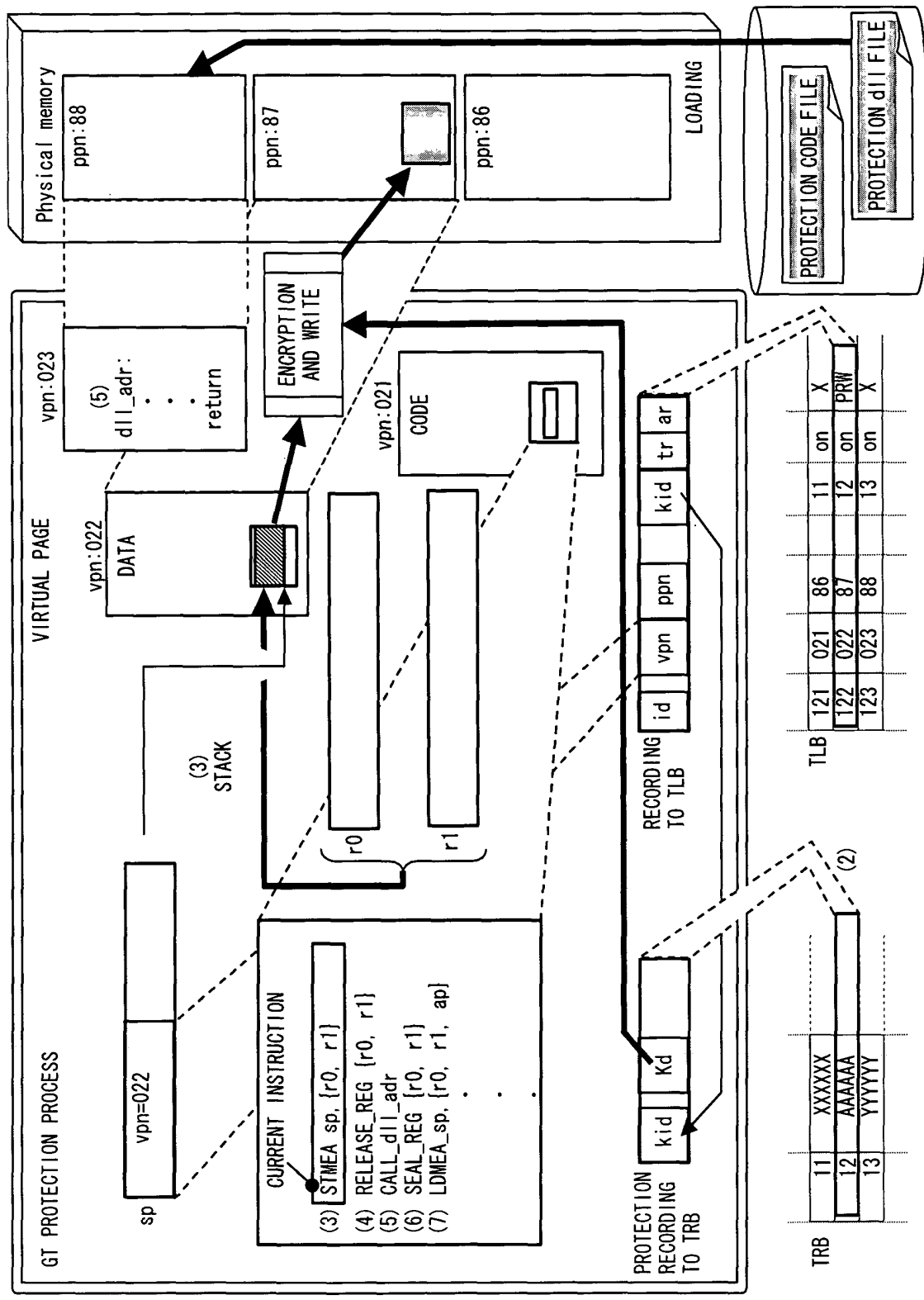


FIG. 27

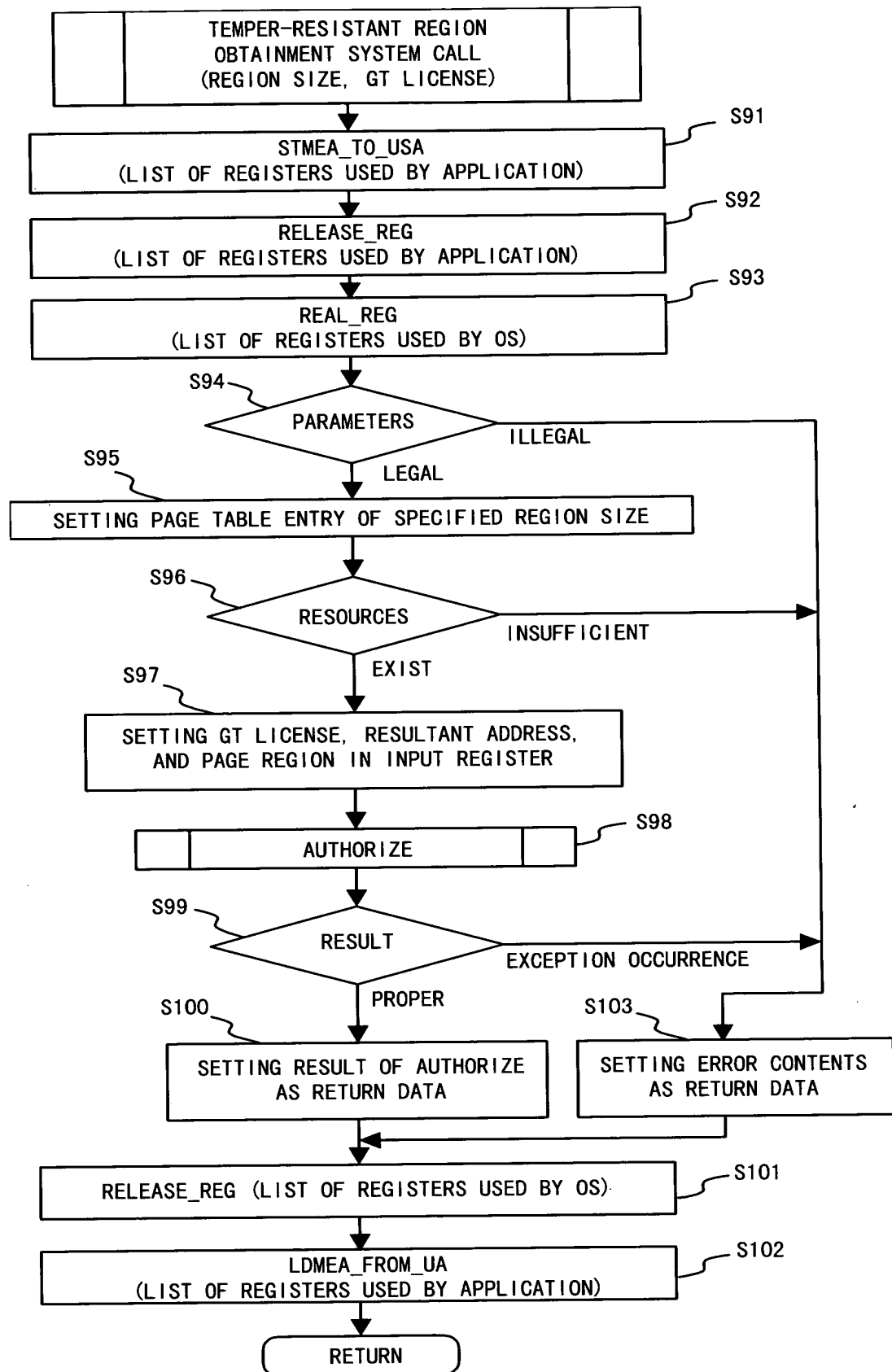


FIG. 28

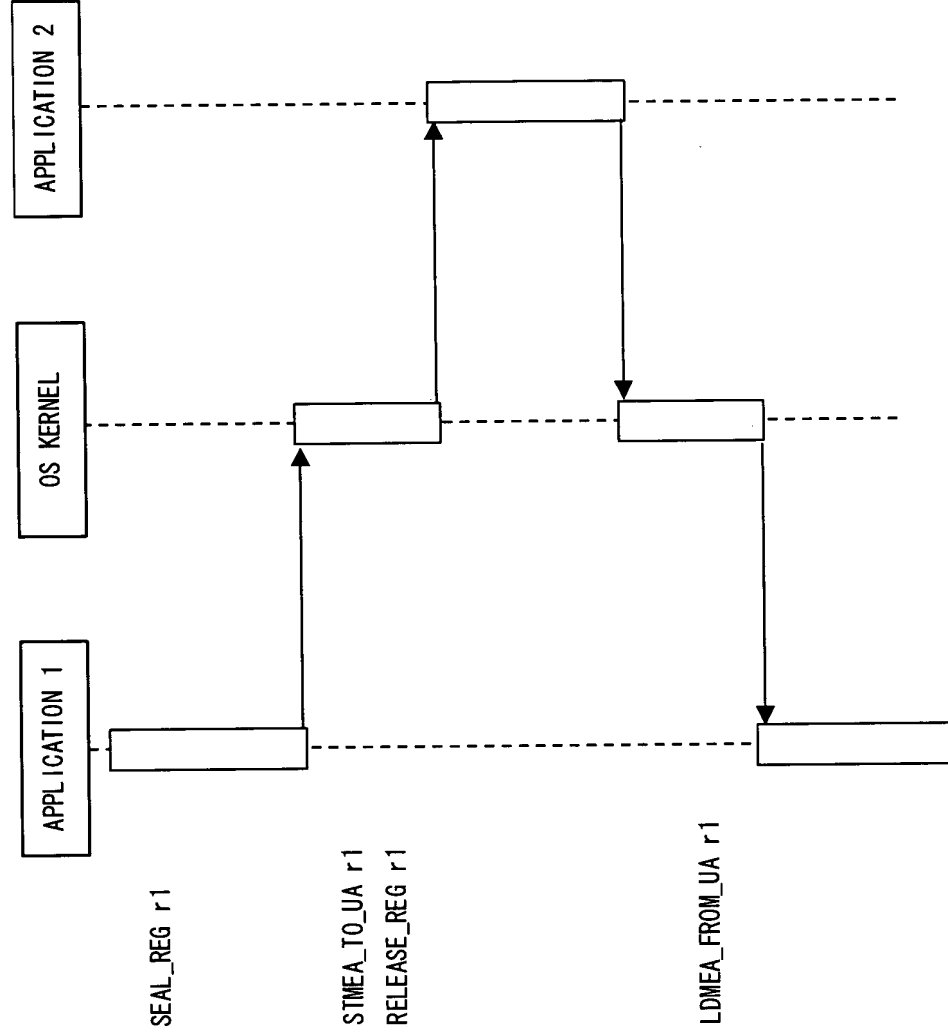


FIG. 30

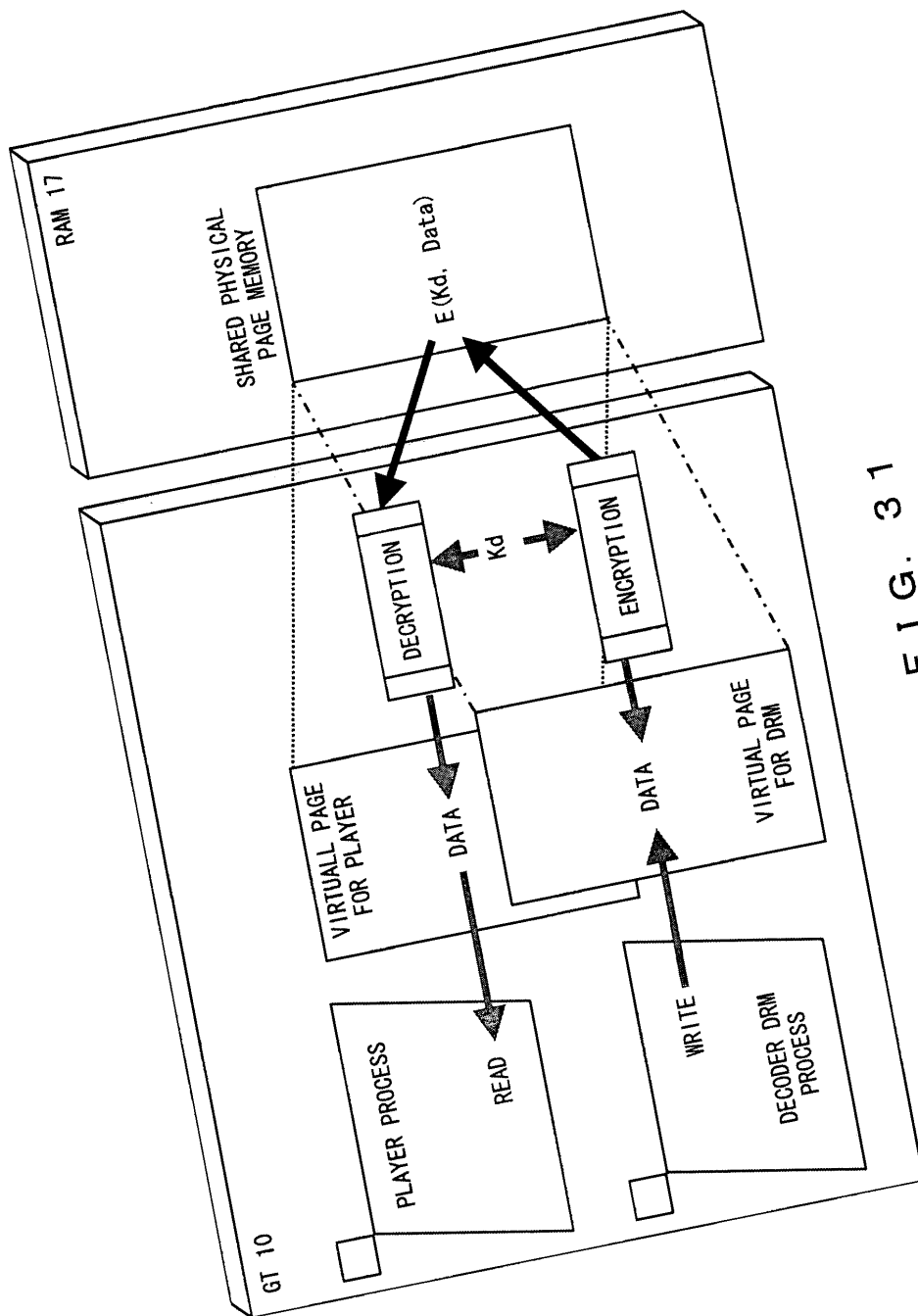


FIG. 31

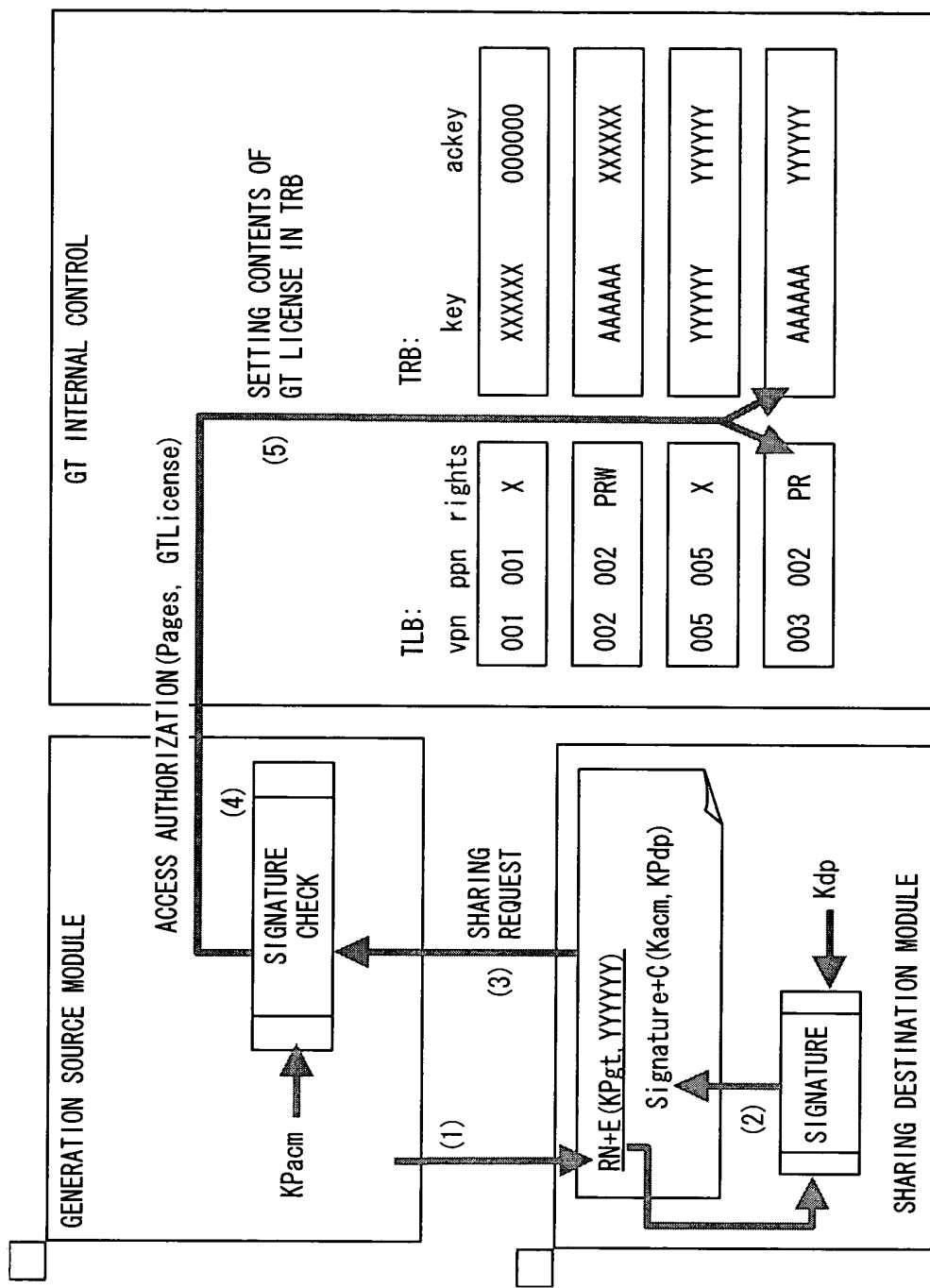


FIG. 32

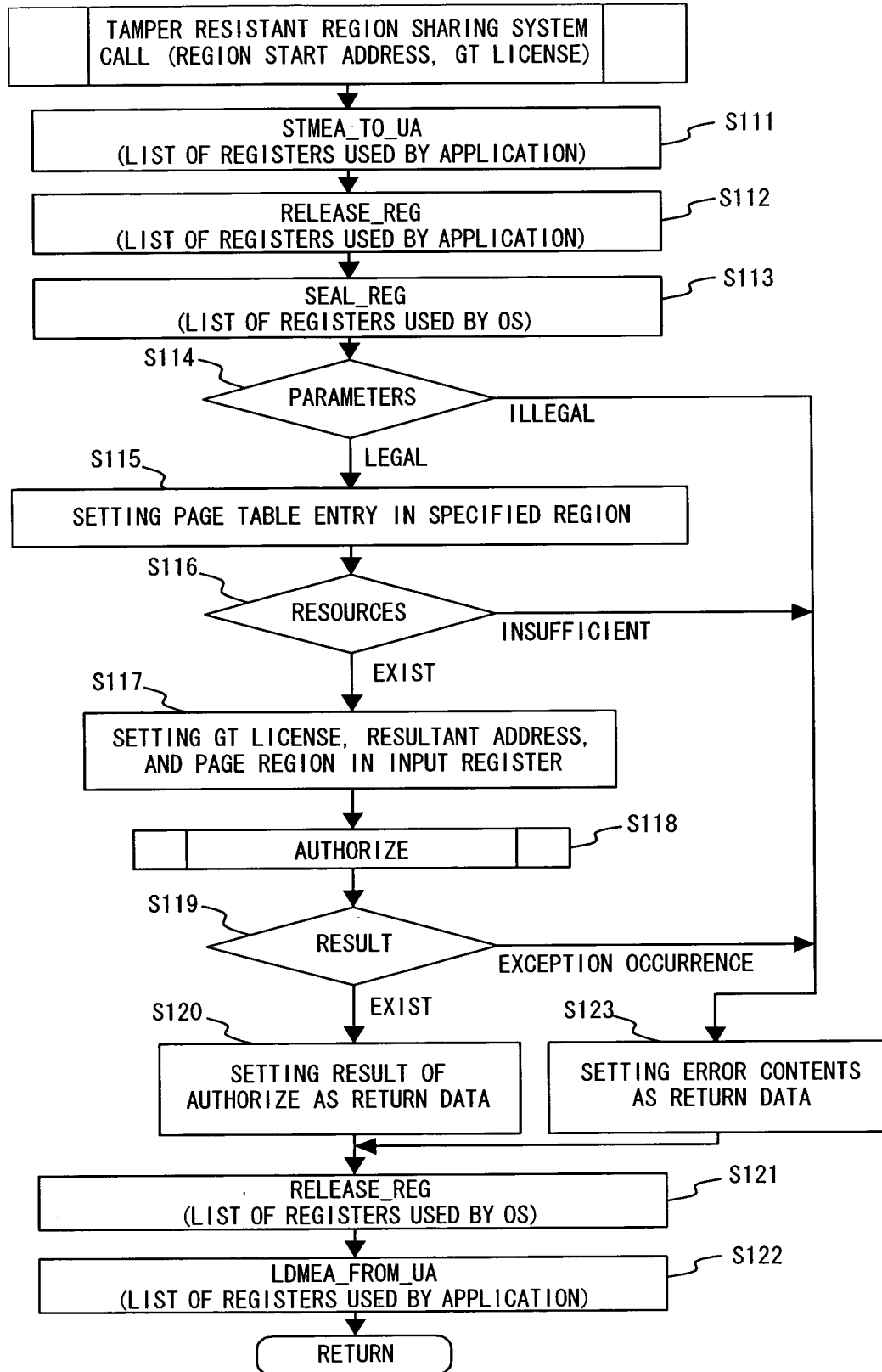


FIG. 33

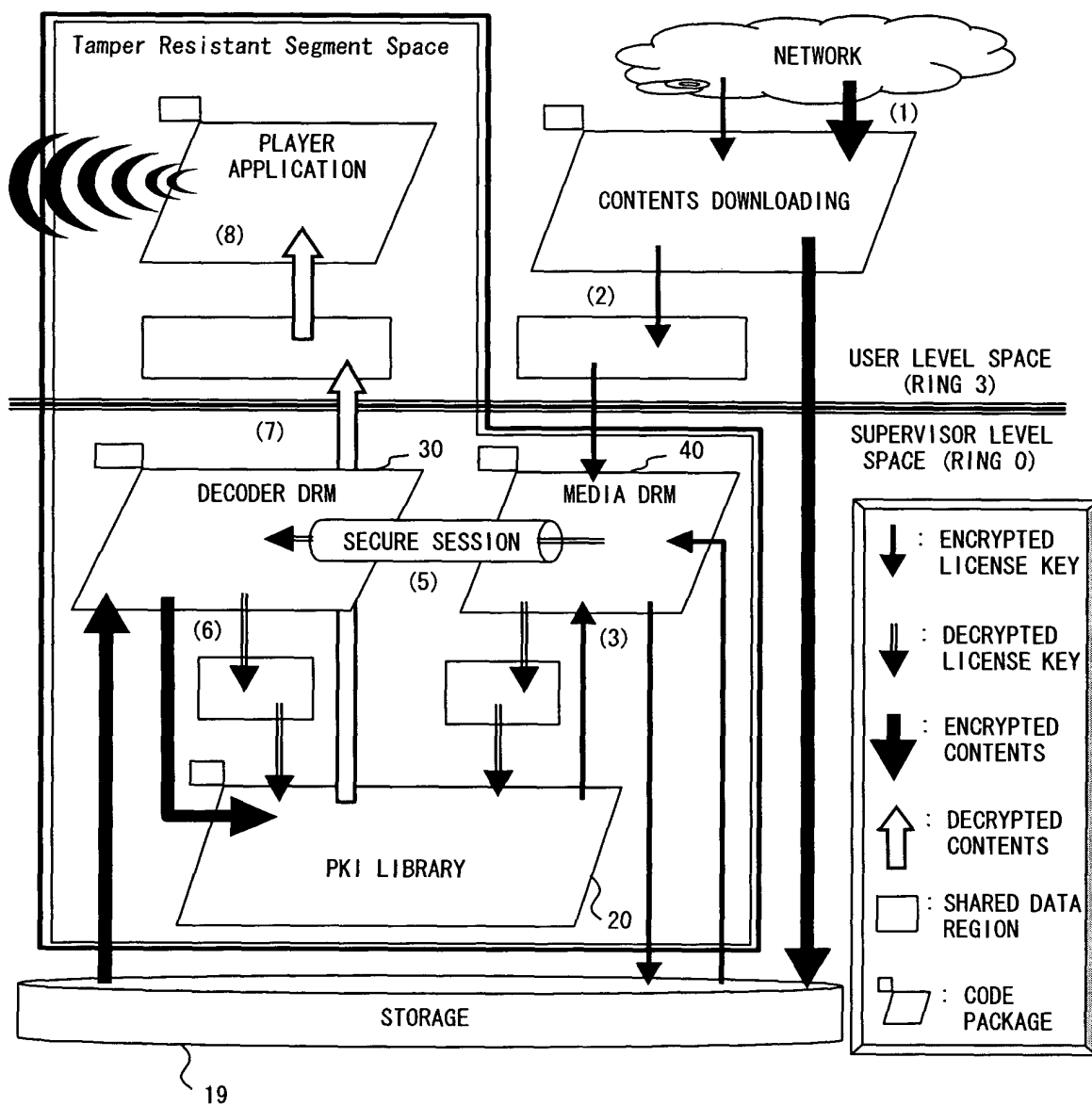


FIG. 34

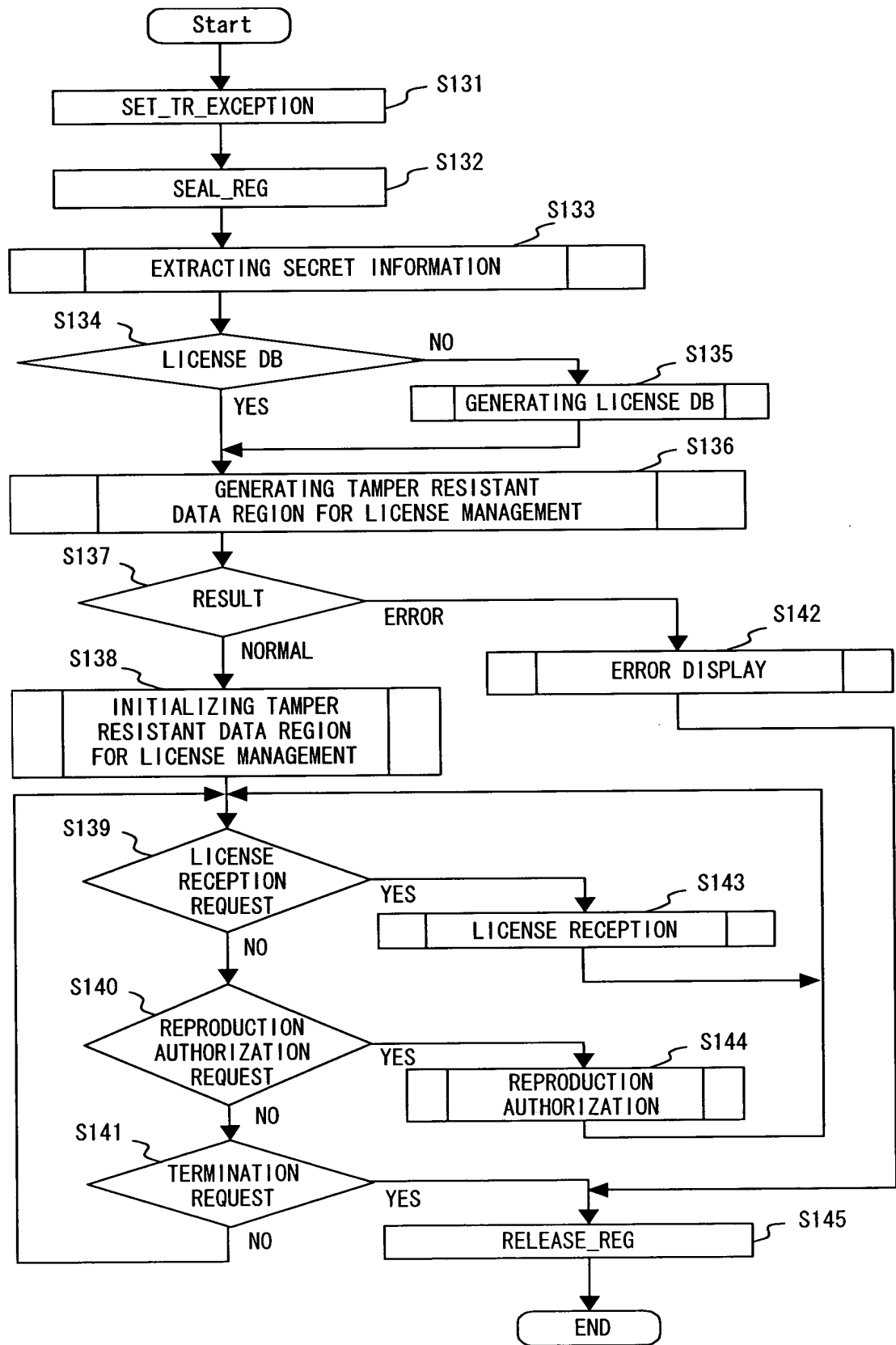


FIG. 35

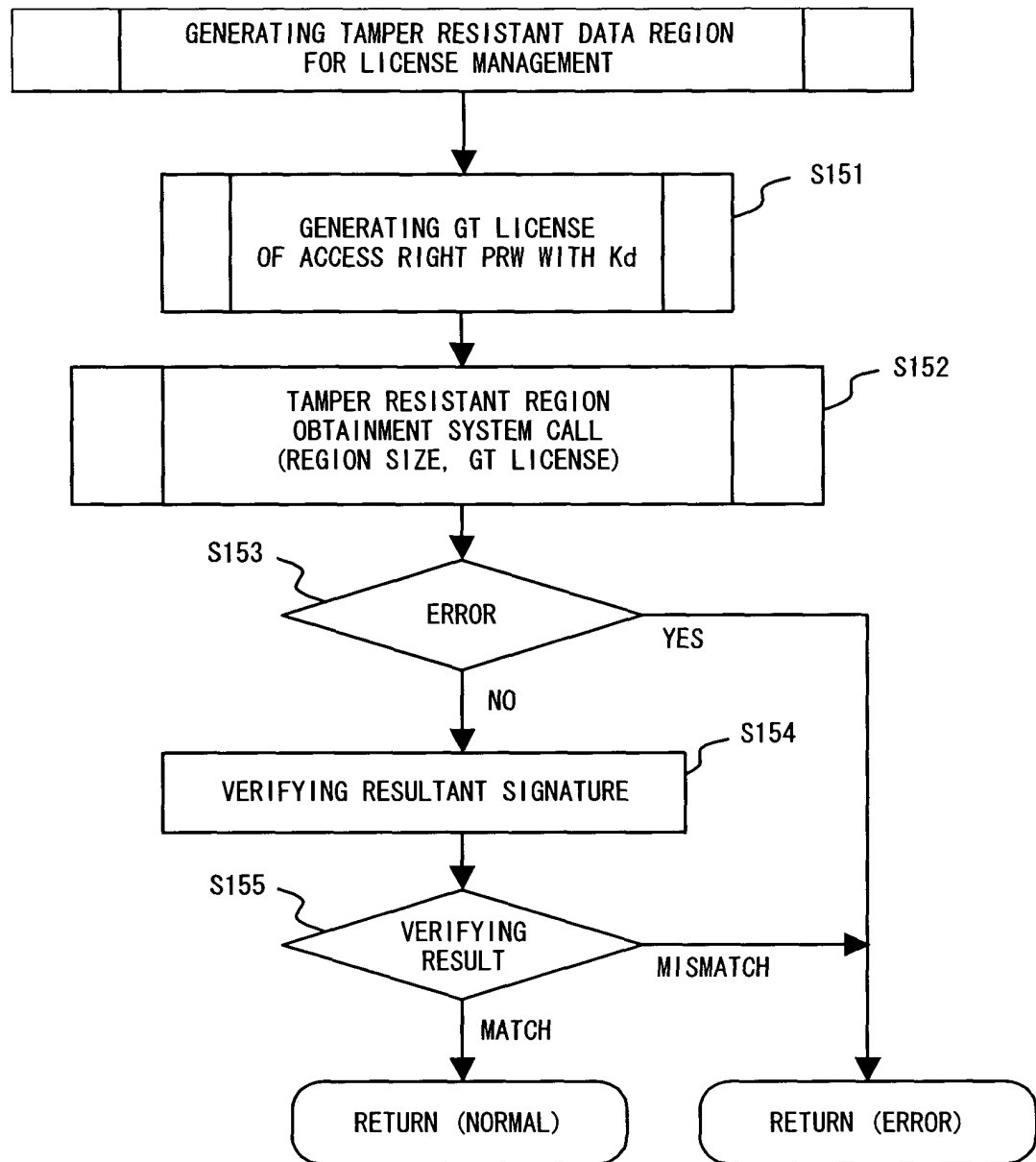


FIG. 36

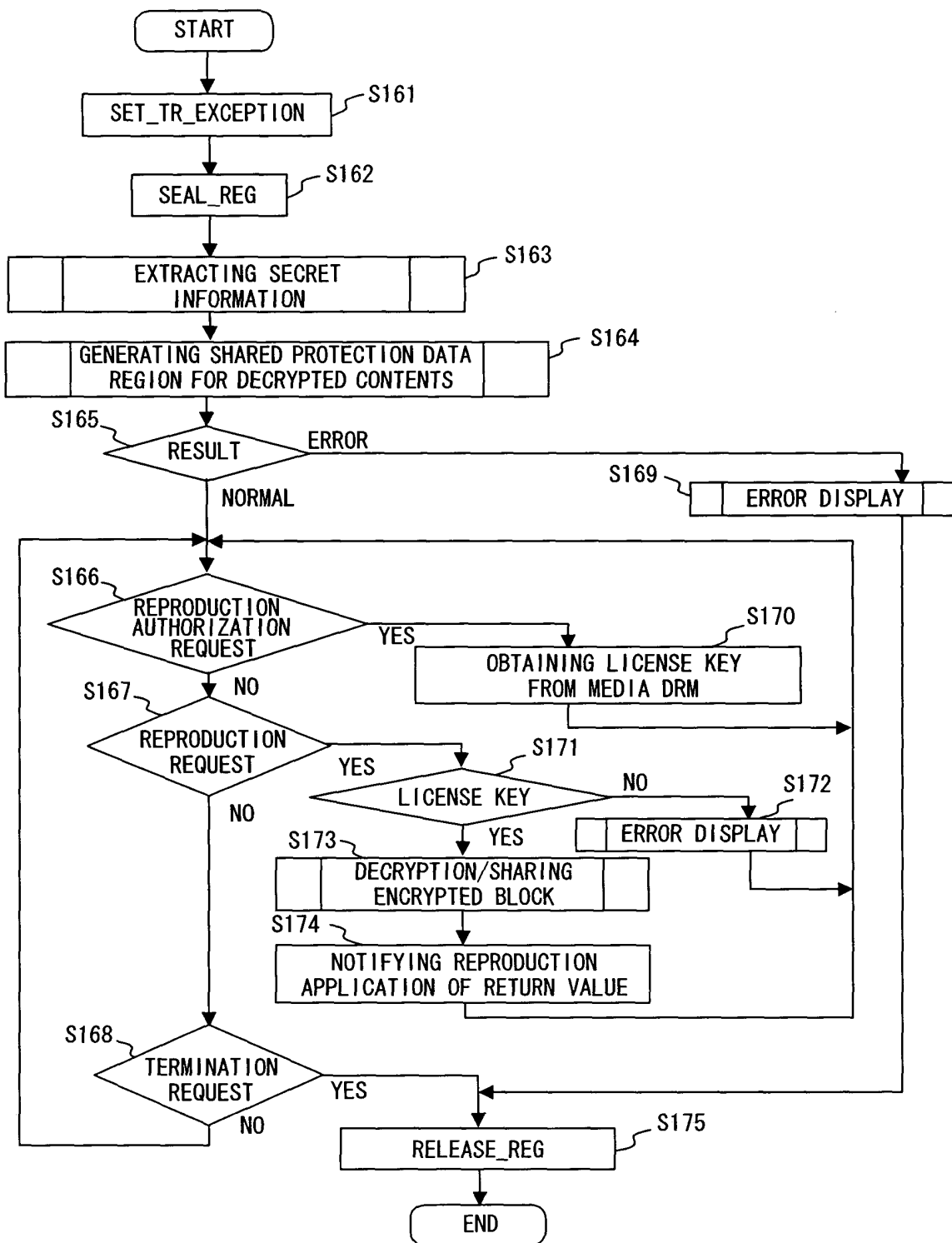


FIG. 37

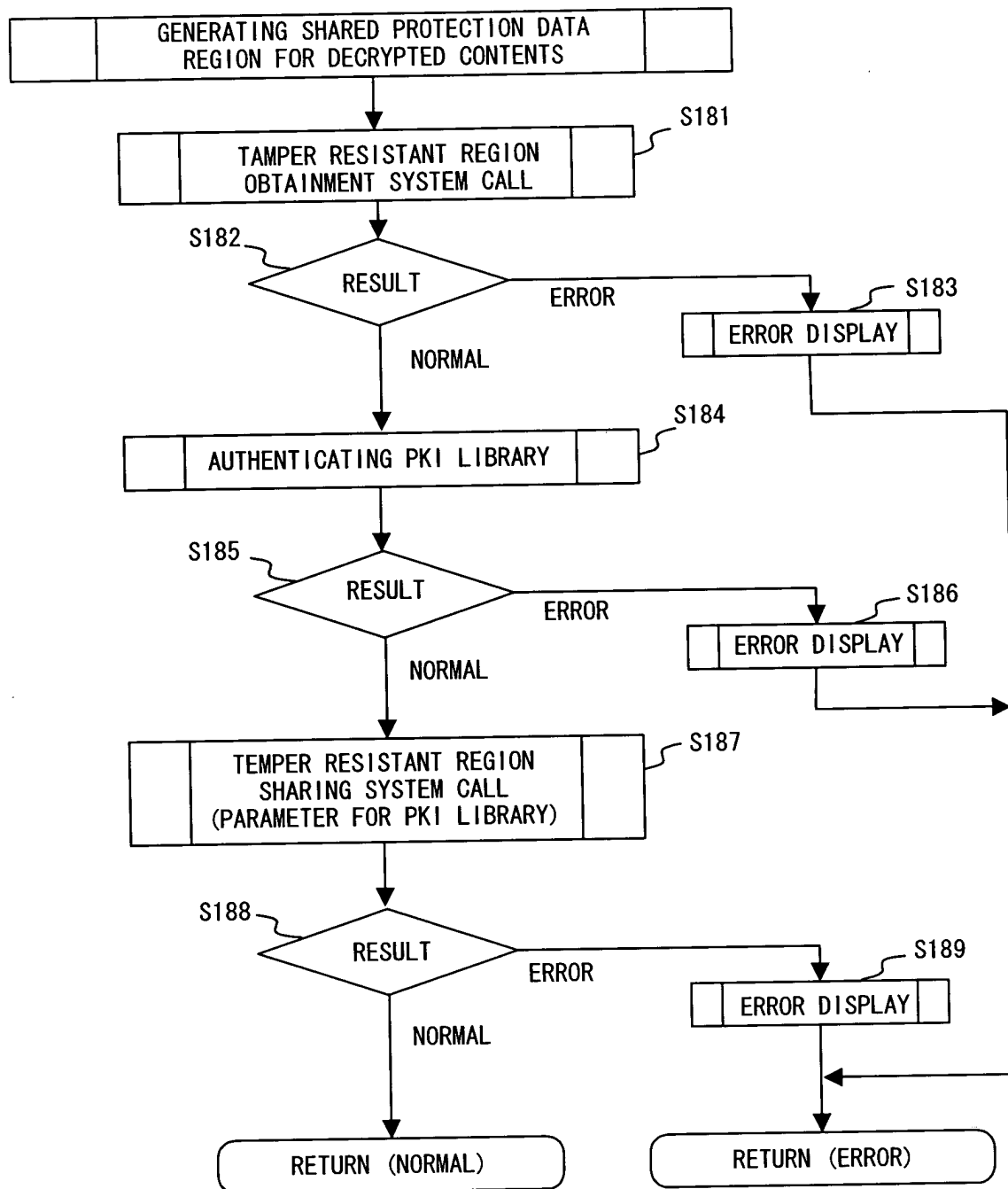


FIG. 38

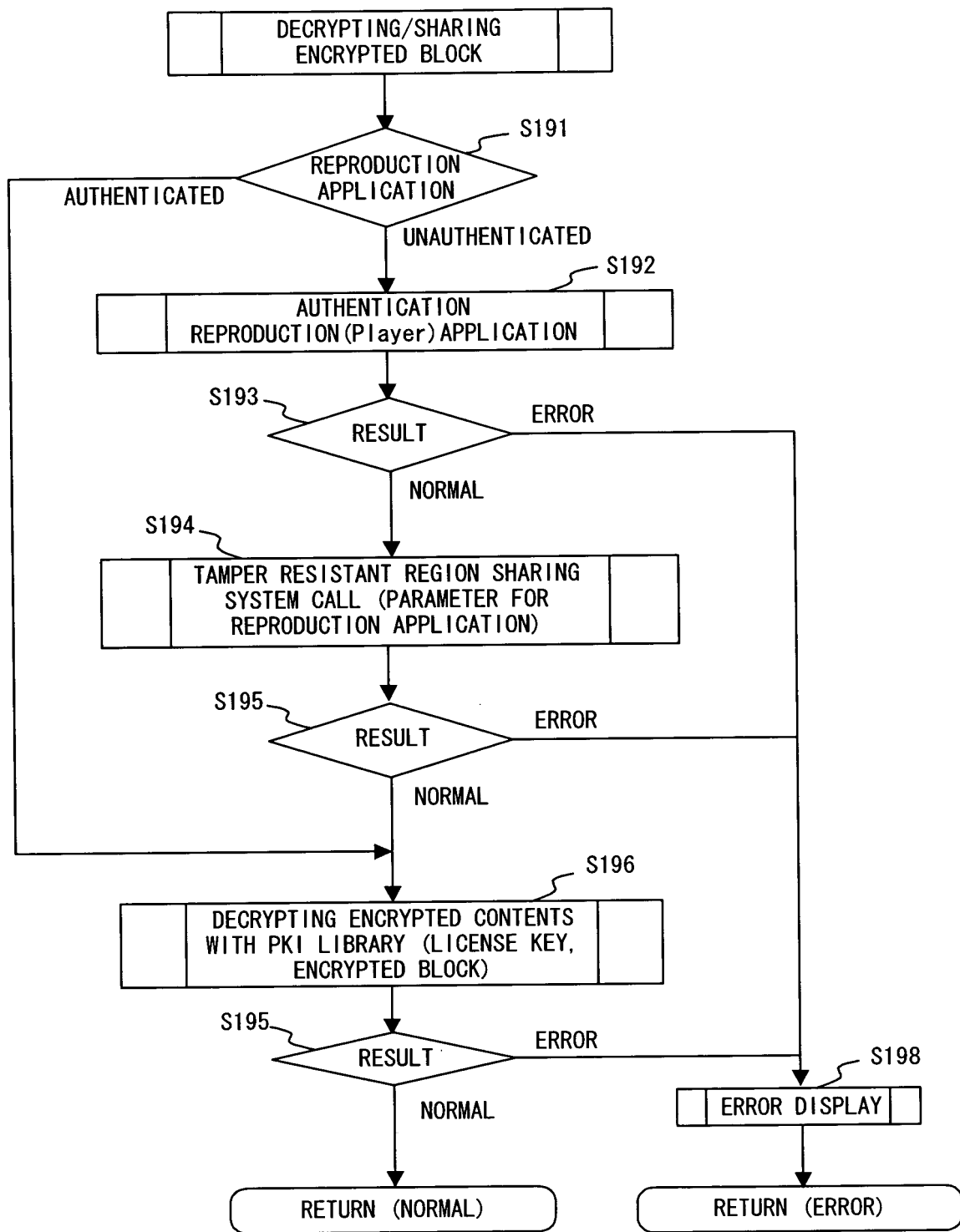


FIG. 39

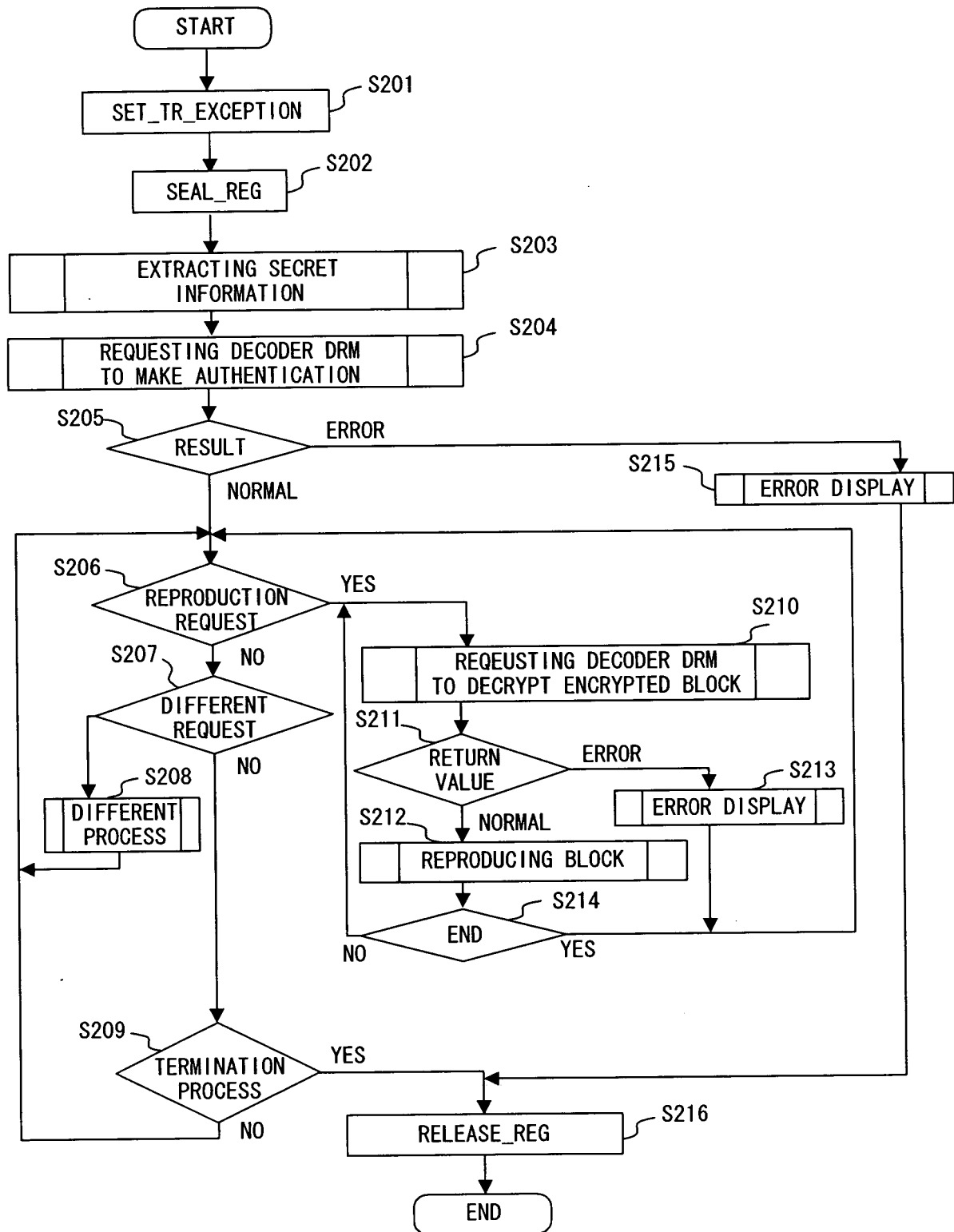


FIG. 40

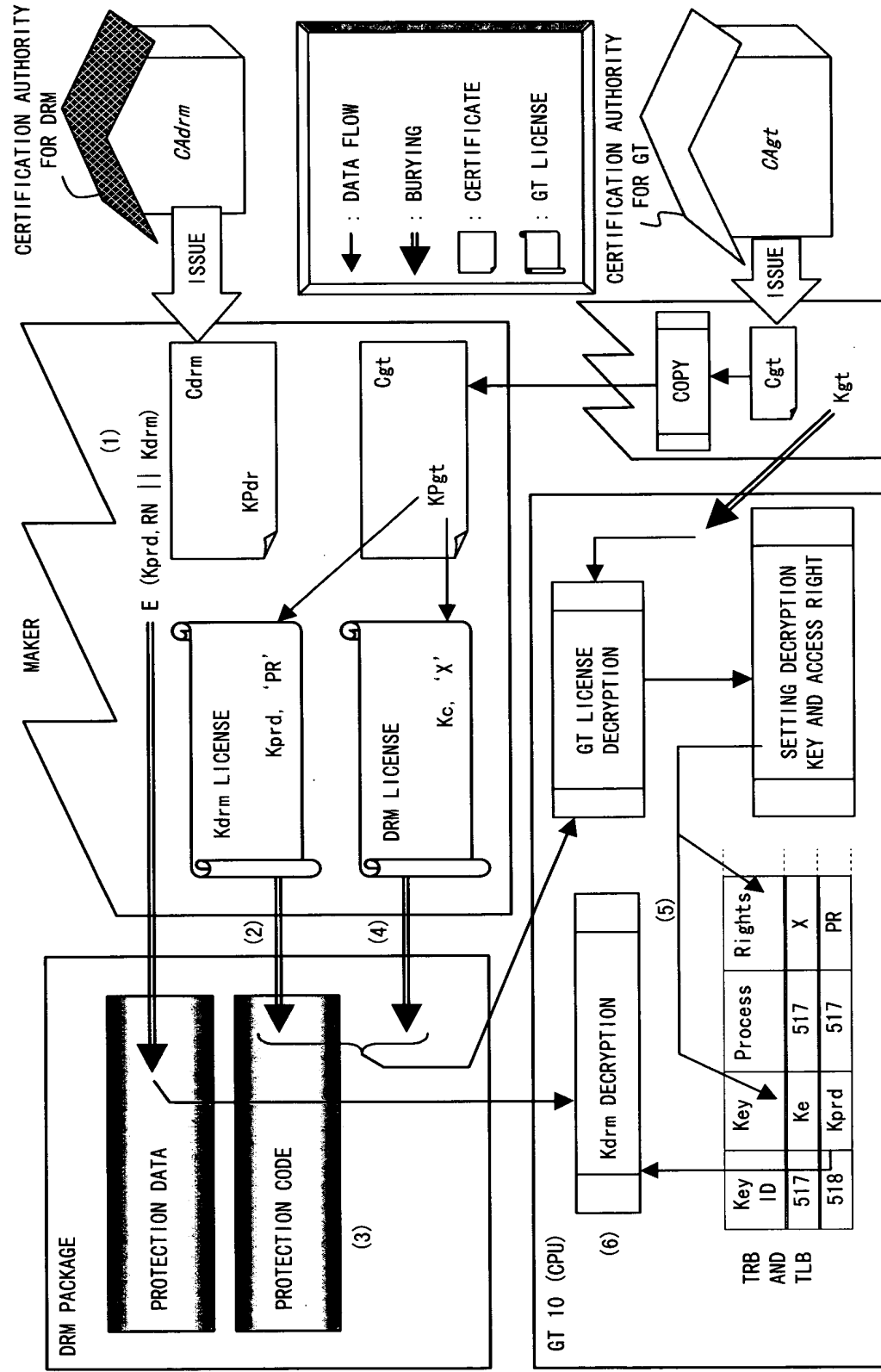


FIG. 41

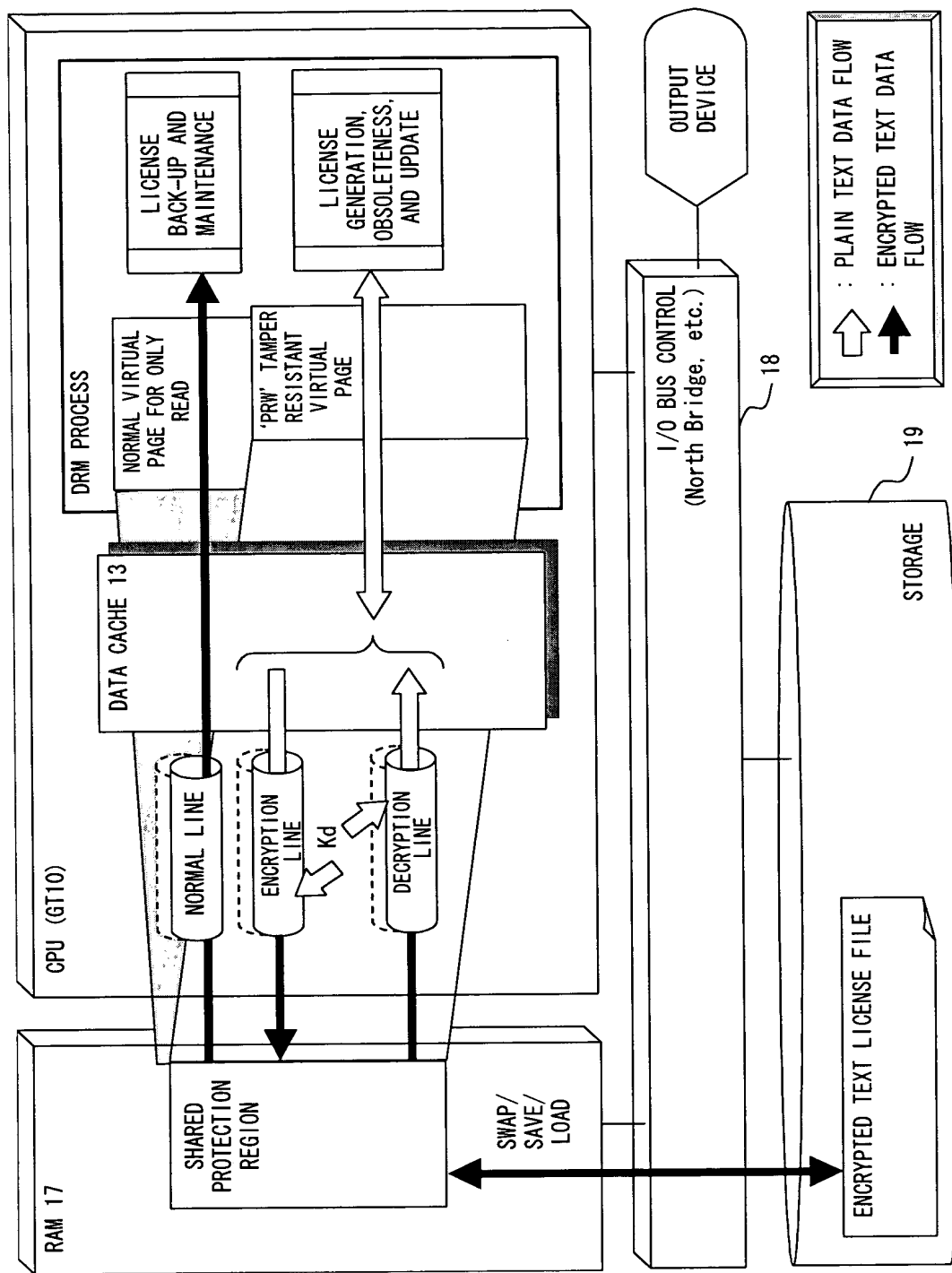


FIG. 42

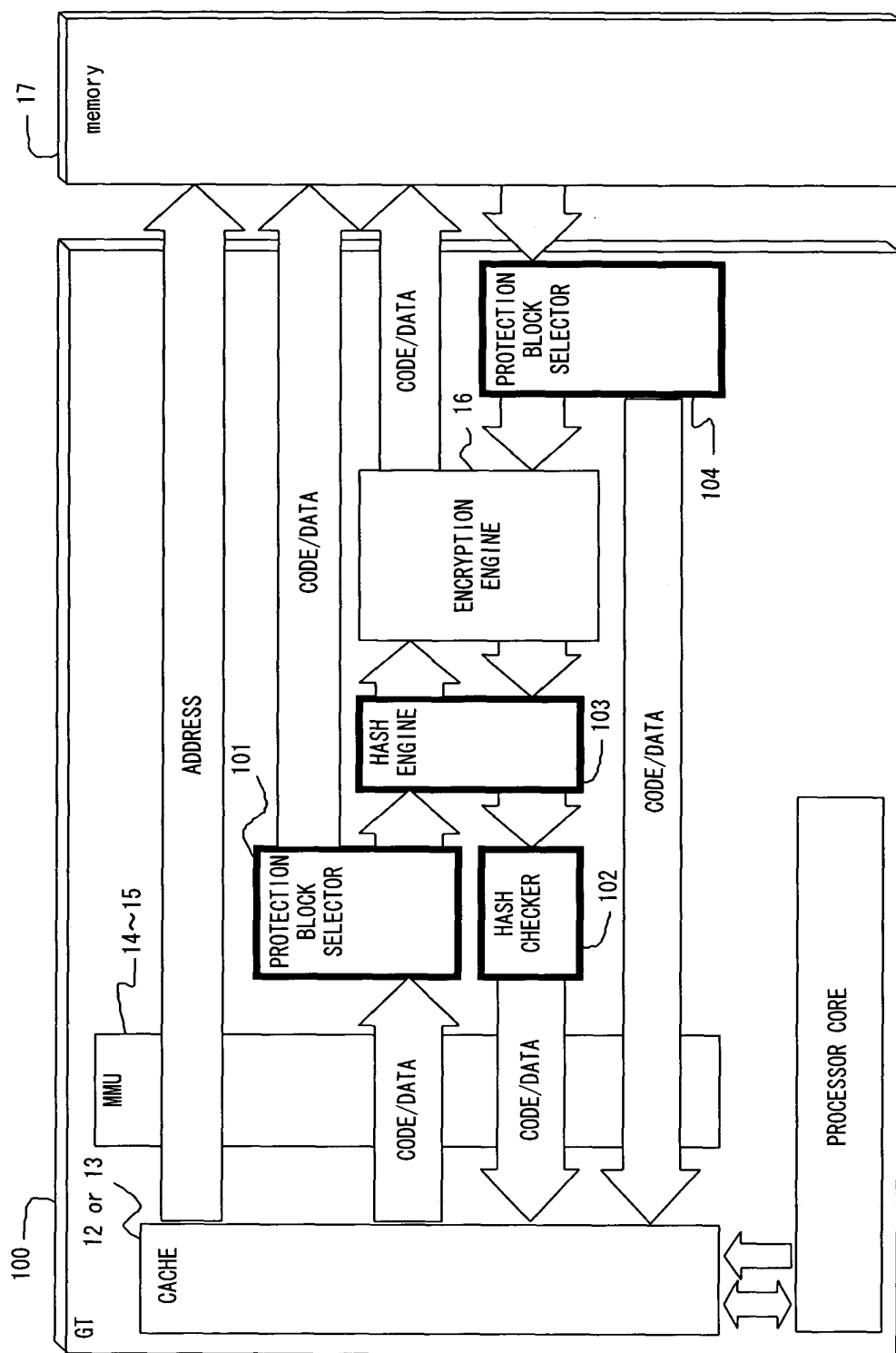


FIG. 43

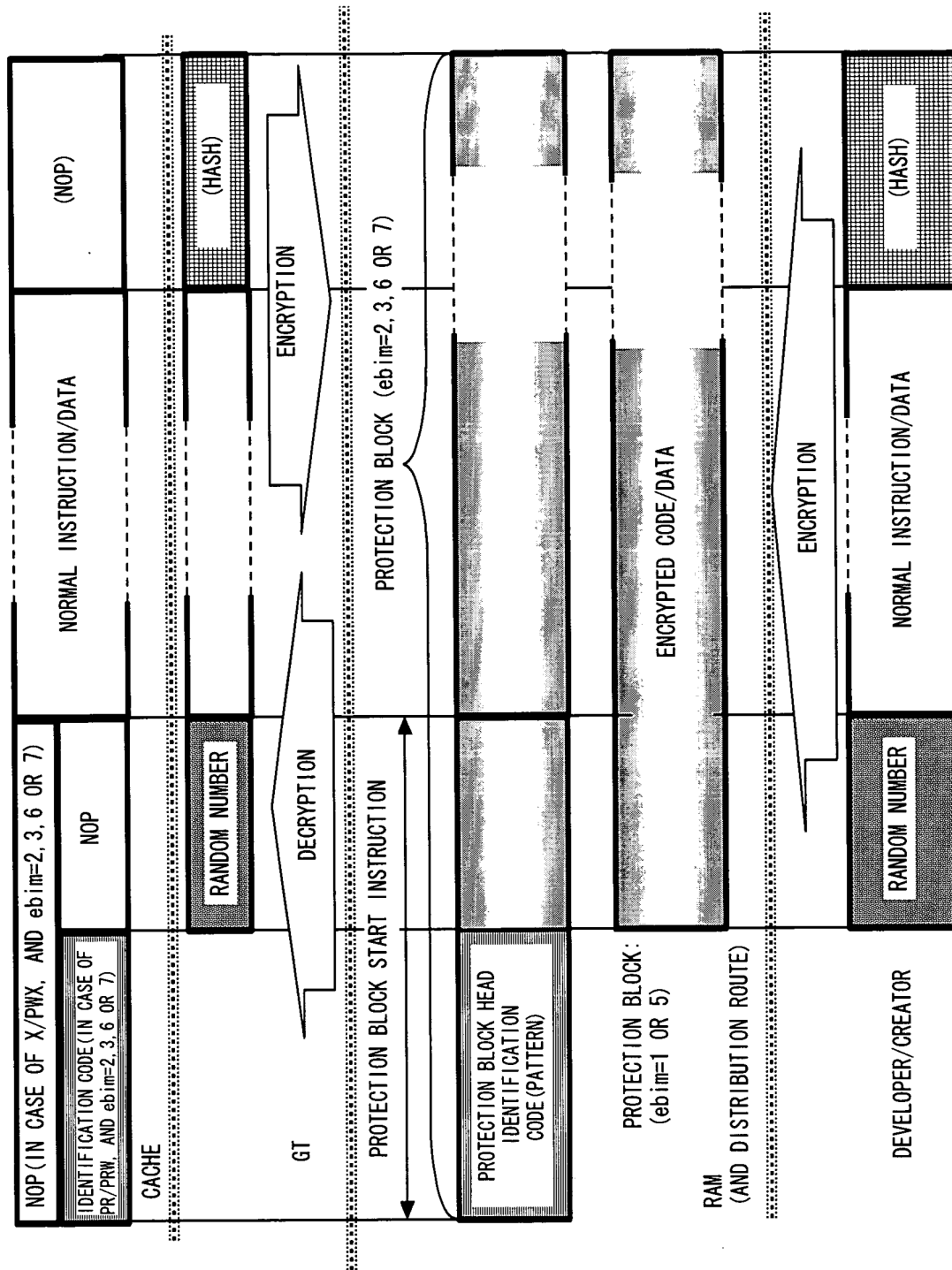
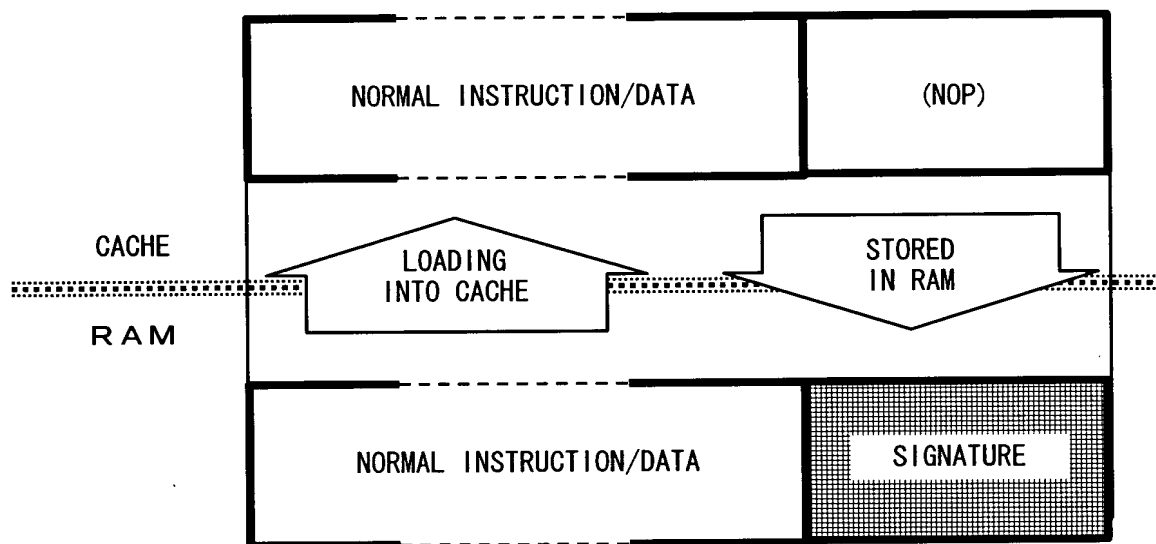


FIG. 44



F I G . 4 5

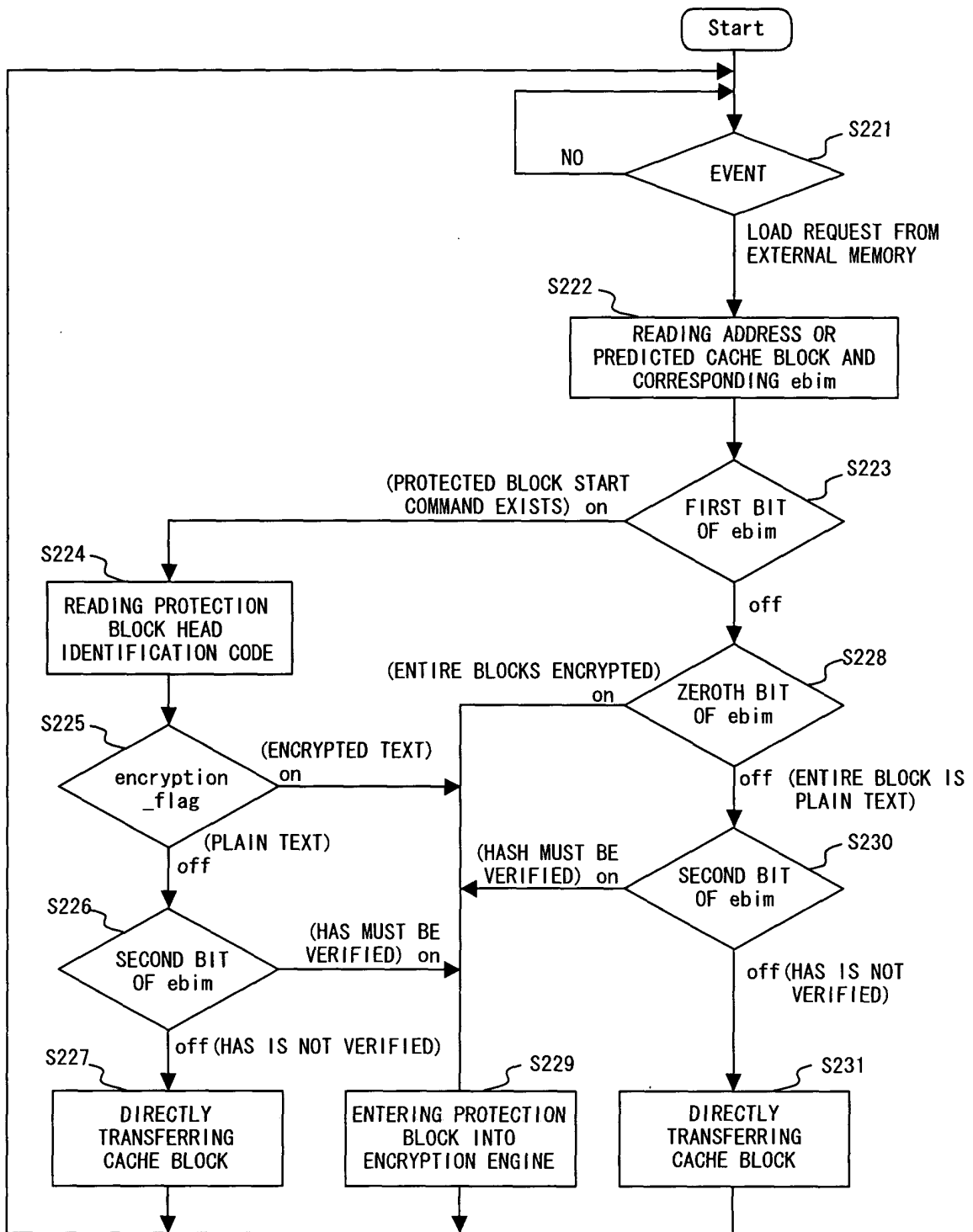


FIG. 46

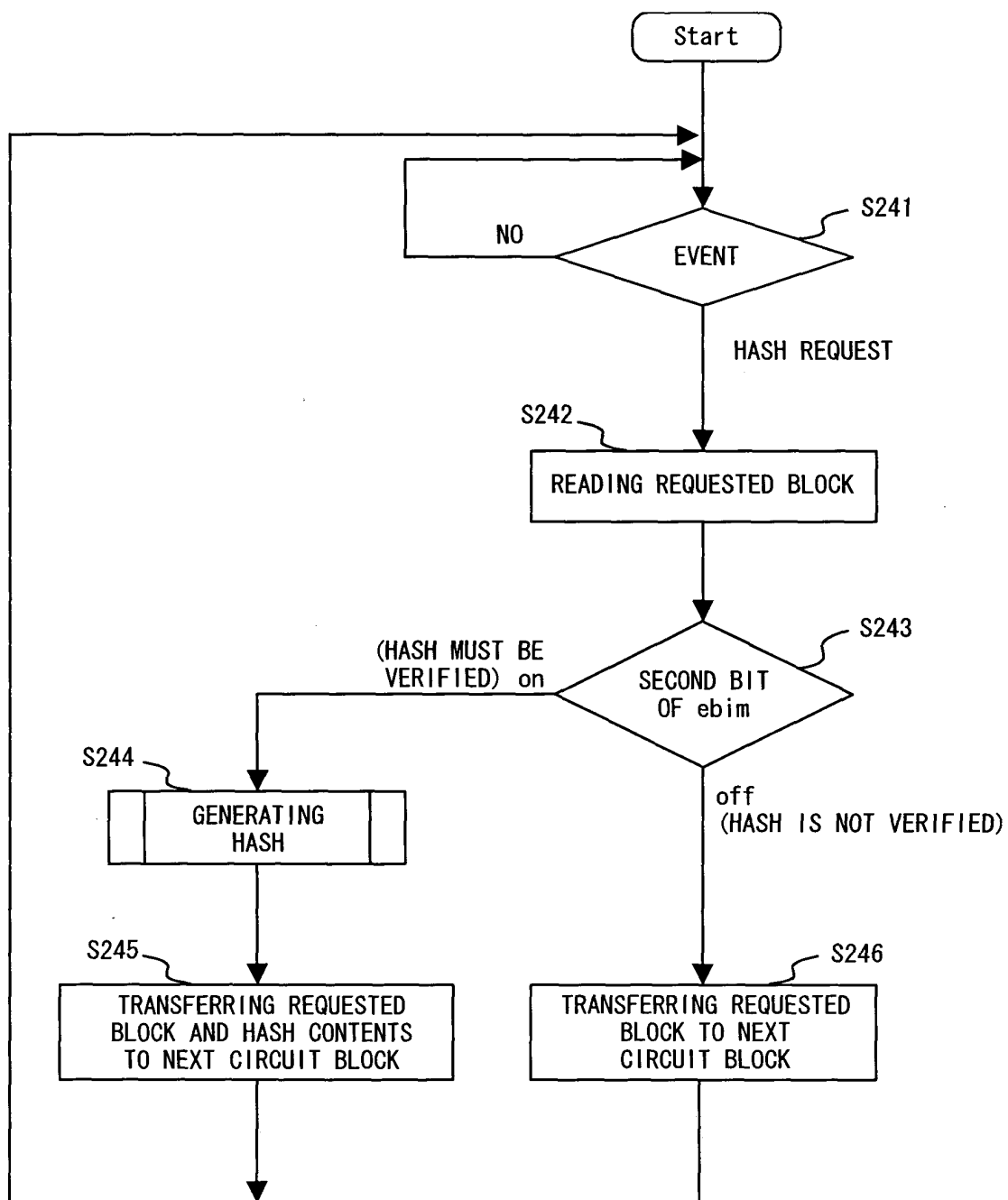


FIG. 47

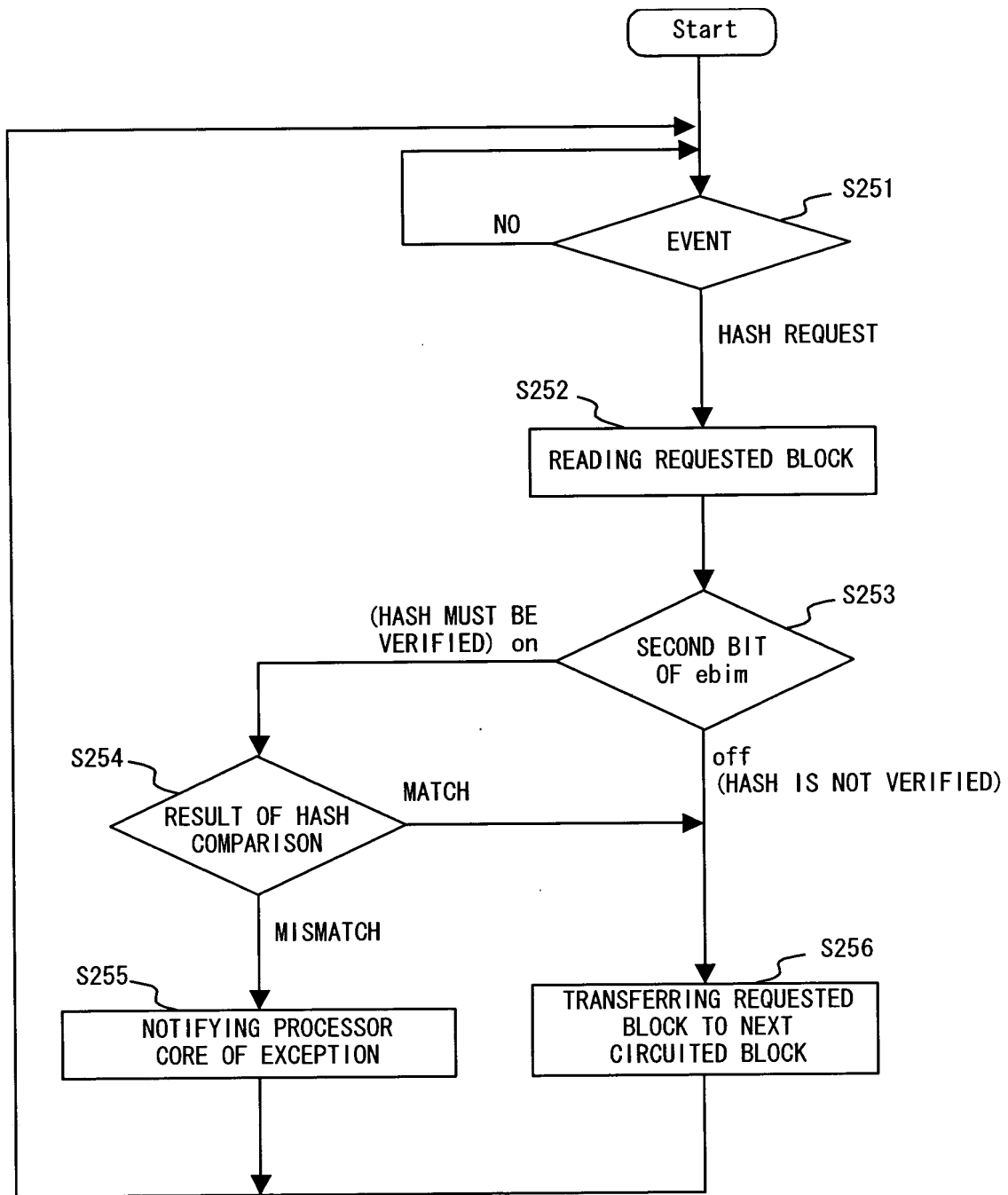


FIG. 48

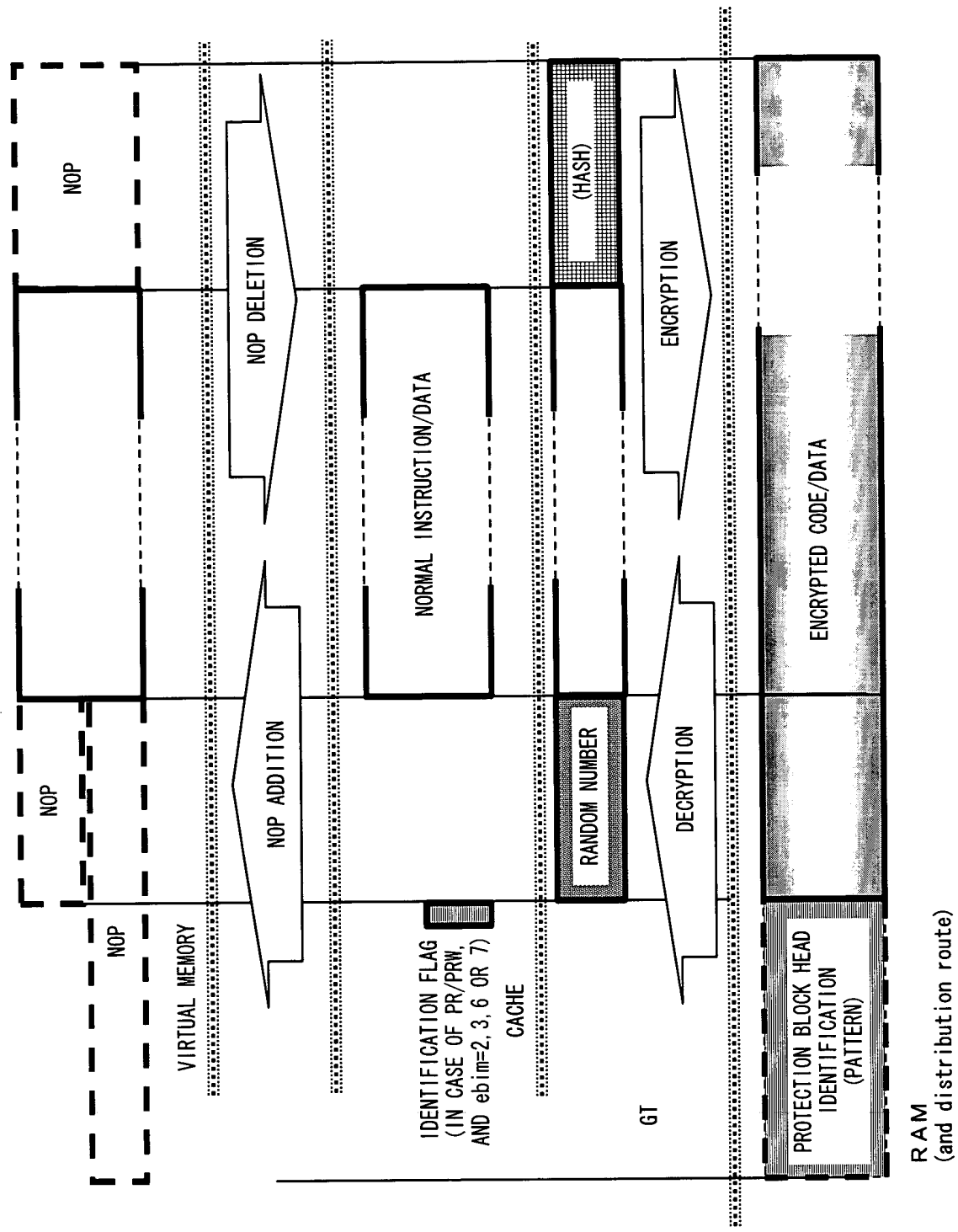


FIG. 49

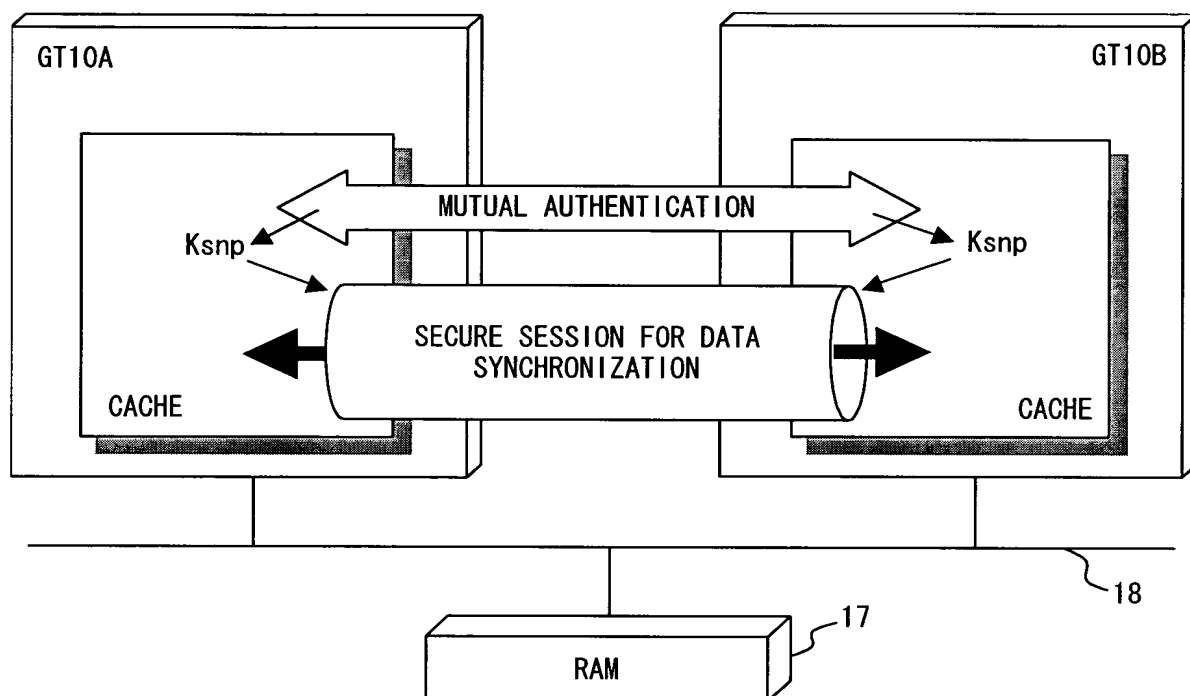


FIG. 50

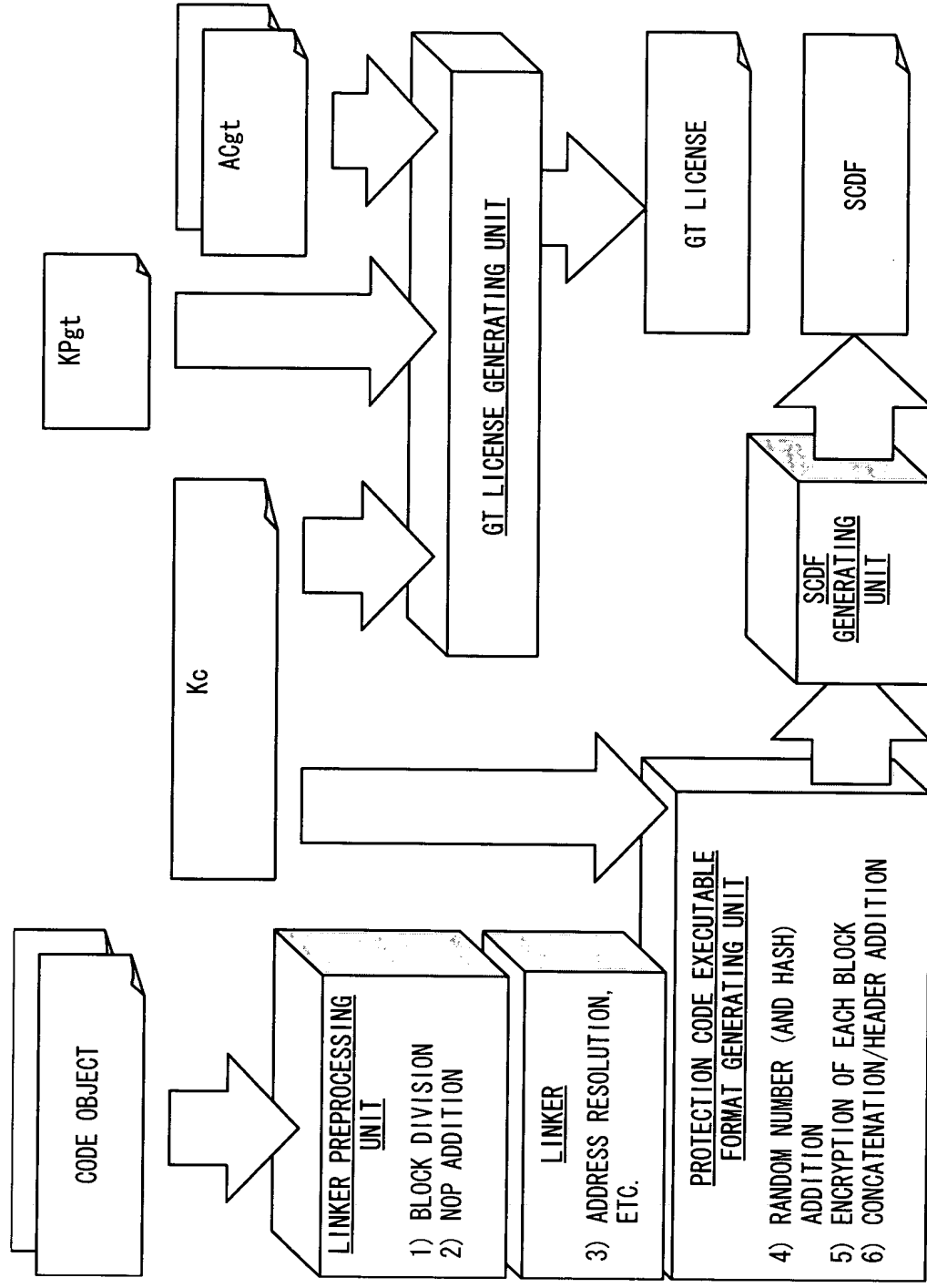


FIG. 51

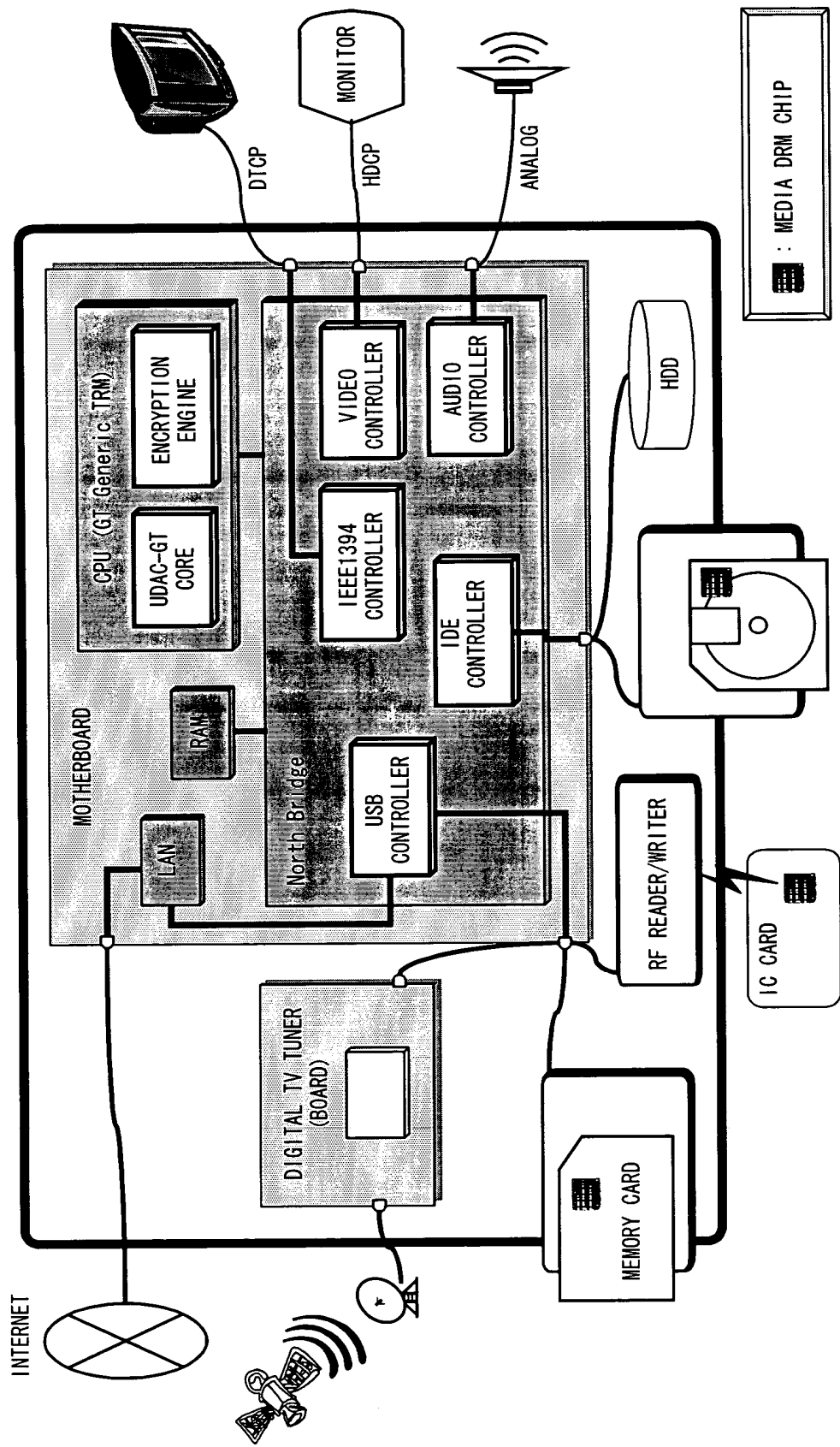


FIG. 52